# SLV-E205EY/E205UY/E210AE/E210CP/E210EE/ E210UX/E210VP/E260AP/E260VP/E275UX

## RMT-V148P/V166/V166A/V166J

# SERVICE MANUAL

*AEP Model*

*SLV-E210AE/E210CP/E210VP/E260AP/E260VP*

*UK Model*

*SLV-E205EY/E205UY/E210UX/E275UX*

*East European Model*

*SLV-E210EE*

**Photo: SLV-E275UX**

### SPECIFICATIONS

**System**

Channel coverage
- SLV-E205EY/UY, E210UX, E275UX:
- PAL (I):
  - VHF A – J (EY model only)
  - UHF B21 – B69
  - CATV S01 – S03, S1 – S20 (EY model only)
  - HYPER BAND S21 – S41 (EY model only)
- SLV-E210AE/CP/VP, E260AP/VP:
- PAL (B, G, H)
  - VHF E2 – E12 (Including canal C) (VHF Italian channel A to H)
  - UHF E21 – E69
  - CATV S01 – S03, S1 – S20
  - HYPER BAND S21 – S41 (EXCEPT SLV-E210CP)

Intermeadiate frequency
- FI-Video 38.9 MHz
- FI-Audio 33.4 MHz

RF output signal
- UHF 32 – 41

Aerial out
- 75-ohm asymmetrical aerial socket

**Inputs/outputs**

EURO-AV
- 21-pin
- Video input: pin 20
- Audio input: pins 2 and 6
- Video output: pin 19
- Audio output: pins 1 and 3

Front Line In: SLV-E275UX
- VIDEO IN, Phono jack (1)
  - Input signal: 0.5 – 1.5 Vp-p 75 ohms, unbalanced, sync negative
- AUDIO IN, Phono jack (1)
  - Input level: – 8 dBs (0 dBs = 0.755 Vrms)
  - Input impedance: more than 47 kilohms

**General**

Power requirements
- 220 – 240 V AC, 50 Hz

Power consumption
- 20W

Operating temperature
- 5 ℃ to 40 ℃

Storage temperature
- – 20 ℃ to 60 ℃

Dimensions
- SLV-E260AP/VP, E275UX: Approx. 360 × 97 × 315 mm (w/h/d)
- SLV-E205EY/UY, E210AE/CP/UX/VP: Approx. 360 × 97 × 309 mm (w/h/d) including projecting parts and controls

Mass
- Approx. 4 kg

**Supplied accessories**

Remote commander (1)
R6 (size AA) batteries (2)
Aerial cable (1)
Mains lead (1)
RF screwdriver (1)

Design and specifications are subject to change without notice.

MICROFILM

SHOWVIEW VIDEO Plus+

VHS PAL VIDEO CASSETTE RECORDER

SONY®

- **Feature Difference**

| FEATURE \ SLV- | E205EY/UY | E210AE/UX | E210CP/EE/VP | E260AP/VP | E275UX |
|---|---|---|---|---|---|
| REMOTE COMMANDER RMT- | V148P | V166A | V166 | V166J | V148P |

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

**SAFETY-RELATED COMPONENT WARNING!!**

**COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

## TABLE OF CONTENTS

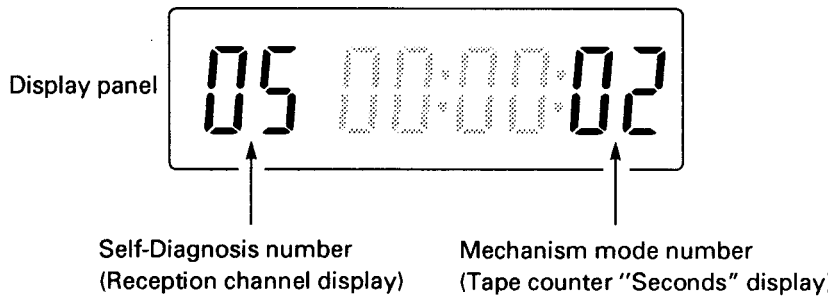

| Section | Title | Page |
|---|---|---|
| | Feature Difference | 2 |
| | Self-Diagnosis Display | 4 |
| 1. | GENERAL | |
| | Getting Started | |
| | Step 1: Connecting the VCR | 1-1 |
| | Step 2: Tuning the TV to your VCR | 1-1 |
| | Step 3: Selecting a language | 1-2 |
| | Step 4: Tuning the VCR to TV channels | 1-2 |
| | Step 5: Setting the clock | 1-4 |
| | Additional tuning instructions | 1-4 |
| | Basic Operations | |
| | Playing a Tape | 1-4 |
| | Recording TV programmes | 1-5 |
| | Recording TV programmes using VIDEO Plus+ | 1-6 |
| | Advanced Operations | |
| | Playing/searching at various speeds | 1-7 |
| | Setting the timer manually | 1-8 |
| | Recording TV programmes using the quick timer | 1-9 |
| | Checking/cancelling timer settings | 1-9 |
| | Searching using the index function | 1-10 |
| | Editing with another VCR | 1-10 |
| | Adjusting the picture | 1-11 |
| | Additional Information | |
| | Visual index | 1-12 |
| 2. | DISASSEMBLY | |
| 2-1. | Removal of Cabinet unit, Mechanism unit and Main Board | 2-1 |
| 2-2. | Temporarily Setting Up and Connecting CP-1 PWB Assembly | 2-3 |
| 2-3. | Installation of the Front Panel | 2-3 |
| 2-4. | Circuit Board Locations | 2-4 |
| 3. | BLOCK DIAGRAMS | |
| 3-1. | Video Circuit | 3-1 |
| 3-2. | System Control & Servo Circuit | 3-4 |
| 3-3. | Audio Circuit | 3-7 |
| 3-4. | Terminal & Input/Output Selector Circuit (SLV-E210CP) | 3-7 |
| 4. | PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS | |
| 4-1. | Overall Wiring | 4-1 |
| 4-2. | Mechanism Connection | 4-3 |
| 4-3. | Printed Wiring Boards and Schematic Diagrams | 4-5 |
| | CP-1 Board | 4-7 |
| | VP-1 Board | 4-39 |
| | TB-1 Board | 4-50 |
| | TM-1, TM-2, TM-8 Boards | 4-53 |
| 5. | REPAIR PARTS LIST | |
| 5-1. | Exploded Views | 5-1 |
| 5-1-1. | Front Panel, Cabinet Assemblies | 5-1 |
| 5-1-2. | Cassette Mechanical Assembly | 5-2 |
| 5-1-3. | Mechanism Chassis Assembly (1) | 5-3 |
| 5-1-4. | Mechanism Chassis Assembly (2) | 5-4 |
| 5-1-5. | Mechanism Chassis Assembly (3) | 5-5 |
| 5-2. | Electrical Parts List | 5-6 |
| 6. | IC PIN FUNCTION DESCRIPTION | |
| | IC301 System Control, Timer, & Tuning Control MPU Pin Functions Table | 6-1 |
| 7. | MECHANICAL ADJUSTMENTS | |
| 7-1. | Maintaining and Checking the Mechanism | 7-1 |
| 1-1. | Regular Checks and Maintenance Items | 7-1 |
| 1-2. | Service Tools | 7-2 |
| 7-2. | An Overview of the Mechanism | 7-3 |
| 2-1. | Names of the Main Parts | 7-3 |
| 2-2. | An Overview of the Mechanism Modes | 7-5 |
| 7-3. | Disassembling the Main Parts of the Mechanism | 7-7 |
| 3-1. | How to Make the Mechanism Move | 7-7 |
| 3-2. | Mechanism Unit | 7-8 |
| 3-3. | Cassette Drive Mechanism | 7-8 |
| 3-4. | Cleaner Roller Assembly | 7-10 |
| 3-5. | Cylinder (Drum) | 7-11 |
| 3-6. | FE Head and ACE Head | 7-13 |
| 3-7. | Capstan Motor | 7-14 |
| 3-8. | Loading Motor Assembly and Worm Gear Assembly | 7-15 |
| 3-9. | Pinch Roller Pressure Mechanism | 7-15 |
| 3-10. | Rewind Lever Assembly, L Guide Lever Assembly and Load Lever Assembly | 7-17 |
| 3-11. | BT Lever Assembly | 7-18 |
| 3-12. | Reel Drive Mechanism | 7-18 |
| 3-13. | Brakes | 7-21 |
| 3-14. | Guides | 7-22 |
| 3-15. | Wheel Gear 2, Main Cam and Mode Switch | 7-23 |
| 3-16. | Crescent Slide | 7-24 |
| 3-17. | S Load Gear, T Load Gear, S Load Lever Assembly and T Load Lever Assembly | 7-25 |
| 3-18. | Tape Sensors, Reel Sensor and EP SW Lever | 7-26 |
| 7-4. | Mechanism Checks and Adjustment | 7-27 |
| 4-1. | Reel Table Torque Check | 7-27 |
| 4-2. | Adjusting the BT Lever Assembly Position and Checking the Back Tention Torque in Play Mode | 7-27 |
| 4-3. | Tape Path Adjustment | 7-28 |
| 8. | ELECTRICAL ADJUSTMENTS | |
| 8-1. | Servo Circuit Adjustment | 8-1 |
| 8-2. | Video Circuit Adjustment | 8-3 |
| 8-3. | Audio Circuit Adjustment | 8-5 |
| 8-4. | IF Circuit Adjustment | 8-6 |
| 8-5. | Test Points for Tape Path Adjustment | 8-6 |

# SELF-DIAGNOSIS DISPLAY

This unit displays the diagnosis contents of abnormalities and the mechanism mode on its display panel in 2-digit numbers. These display shows the outline of the problems. Use it as a reference when servicing the unit.

## 1. Self-Diagnosis Contents and Mechanism Mode Display

- When the STOP button on the remote control is pressed for about 10 seconds continuously, the self- diagnosis number will be displayed on the reception channel display of the display panel and number indicating the failed mechanism mode (changed mode when being shifted) on the tape counter "seconds" display for 10 seconds each.
- During self-diagnosis display, displays other than the diagnosis number/mechanism mode number will be turned off and when displays end, the normal display will be returned automatically.
- Refer to "Self-Diagnosis Contents" for the self-diagnosis numbers and the "Mechanism Mode Display Contents" for the mechanism mode numbers.
- When the "0" button on the remote control unit is pressed during display, and clearing the self-diagnosis display and mechanism mode display.




**Self-Diagnosis Contents**

| No. | Problem | Main Possible Cause | Mechanism Operations and State After Occurrence |
|---|---|---|---|
| 00 | There is no abnormality in the mechanism. | | |
| 01 | The cylinder motor does not rotate. | • The cylinder motor is faulty.<br>• The control of the cylinder motor is faulty.<br>• The tape winds around the cylinder. | Shifts to the STOP mode. |
| 02 | The take-up reel does not rotate. | • The take-up reel is caught.<br>• The reel belt is faulty.<br>• The take-up torque has decreased. | Shifts to the STOP mode. |
| 03 | The capstan motor does not rotate. | • The capstan motor is faulty.<br>• The control of the capstan motor is faulty. | Shifts to the STOP mode. |
| 04 | The tape cannot be loaded with the cassette inserted.<br>(But unloading can be performed.) | • Error in the operations of the tape loading mechanism.<br>• Foreign particles in the tape load-ing mechanism.<br>• The tape end sensor is faulty.<br>• The reel brake of the tape cassette has not been released. | Unloads, shifts to the INITIAL mode, and the power goes off. |
| 05 | Tape loading and unloading cannot be performed with the cassette inserted. | • The tape guide is caught.<br>• The loading motor is faulty.<br>• The control of the loading motor is faulty. | The power is forcibly turned off with the mechanism at its current position. |

| No. | Problem | Main Possible Cause | Mechanism Operations and State After Occurrence |
|---|---|---|---|
| 06 | Front unloading cannot be performed when ejecting the cassette. (Front loading can be performed.) | • The cassette drive mechanism is faulty.<br>• The front door is caught. | Front loads and shifts to the STOP or INITIAL mode.<br>• When the power switch is turned on before eject operations: Shifts to the STOP mode.<br>• When the power switch is turned off before eject operations: Shifts to the INITIAL mode and the power goes off. |
| 07 | Front loading and front unloading cannot be performed when ejecting the cassette. | • The tape cassette is caught in the cassette drive mechanism.<br>• The main cam and front rack gear of the front loading mechanism have not engaged properly.<br>• The gears of the front loading drive mechanism have not engaged properly. | The power is forcibly turned off with the mechanism at its current position. |
| 08 | The mechanism becomes 1 (REVIEW) while moving from 2 (IDLER), 3(STILL), 4 (BRAKE), and to 5 (STOP). | • The mechanism mode switch contact is faulty. | The power is forcibly turned off with the mechanism at its current position. |
| 09 | The mechanism becomes 7 (INITIAL) while moving from 1 (REVIEW), 2 (IDLER), 3(STILL), 4 (BRAKE), and to 5 (STOP). | • The mechanism mode switch contact is faulty. | Carries out tape take-up operations, shifts to the INITIAL mode, and the power goes off. |

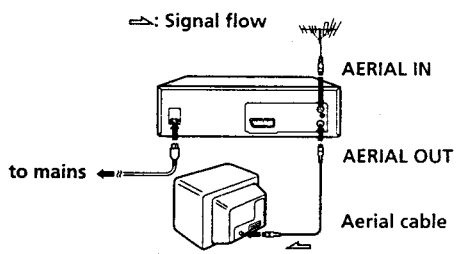
**Note**: For details of mechanism operations corresponding to the mechanism positions of the self-diagnosis numbers 08 and 09 above, refer to the separate volume on the V95 I mechanism manual.
These manual reference numbers are shown in the cover.

**Mechanism Mode Display Contents**

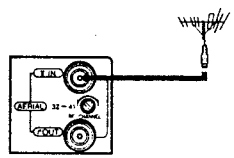
| Mode No. | Mechanism Mode | Mode No. | Mechanism Mode | Mode No. | Mechanism Mode |
|---|---|---|---|---|---|
| 00 | CASSETTE OUT | 08 | PLAY | 16 | VIDEO INSERT |
| 01 | STANDBY | 09 | REC | 17 | VIDEO INSERT – PAUSE |
| 02 | STOP | 10 | AUDIO DUBBING | 18 | AUDIO/VIDEO INSERT |
| 03 | STILL | 11 | X2 SPEED PLAY | 19 | REVERSE X2 SPEED PLAY |
| 04 | REC-PAUSE | 12 | CUE | | |
| 05 | AUDIO DUBBING – PAUSE | 13 | REVIEW | | |
| 06 | FRAME ADVANCE | 14 | FAST FORWARD | | |
| 07 | SLOW | 15 | REWIND | 99 | OTHERS |

# Step 1

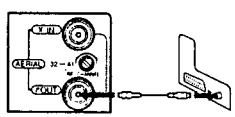
## Connecting the VCR



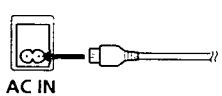

**1** Disconnect the aerial cable from your TV and connect it to AERIAL IN on the rear panel of the VCR.



**2** Connect AERIAL OUT of the VCR to the aerial input of your TV using the supplied aerial cable.

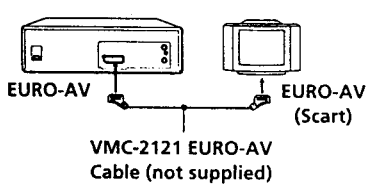


**3** Connect AC IN of the VCR to the mains using the supplied mains lead.



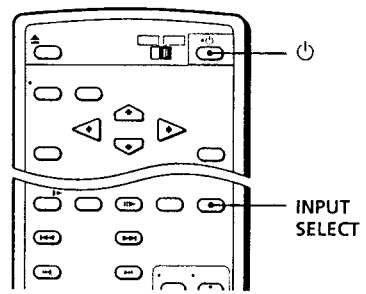

### Additional connection

If your TV has a EURO-AV (Scart) connector, connecting the VCR and TV as shown on the right improves picture quality.




# Step 2

## Tuning the TV to your VCR




**If you have connected your VCR to the TV using the EURO-AV cable, skip this step.**

**1** Press ⏻ (on/standby) to turn on the VCR.

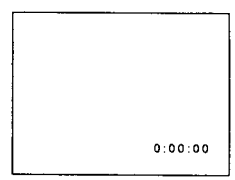
**2** INPUT SELECT

Press INPUT SELECT until "AV" appears in the display window.

**3** Turn on your TV and select a programme position for video playback.

**4** Tune the TV between UHF channels 32 and 41 so that a clear blue screen with tape counter appears on the TV screen.

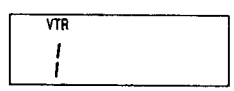
Refer to your TV manual for tuning instructions.




**5** INPUT SELECT

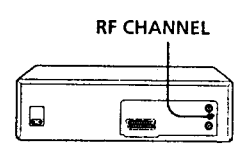
Press INPUT SELECT until "AV" disappears.

A programme position number lights instead.




### To obtain a clear blue screen

The blue screen may not appear clearly in step **4** above. In this case, turn the RF CHANNEL screw at the rear of the VCR with the supplied RF screwdriver, to a position where the TV clearly displays a blue screen.









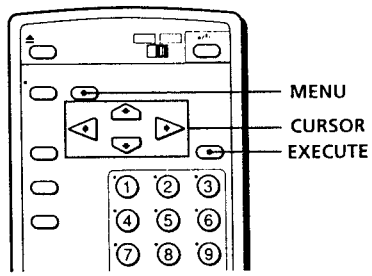



This section is extracted from SLV-E275UX Instruction manual.

# Step 3

## Selecting a language

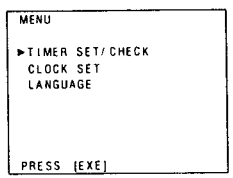
**You can select one of ten languages for the on-screen display, using the remote commander. The initial setting is English.**




**1** MENU

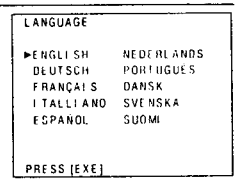
Press MENU.

The following menu appears on the TV screen.




**2** CURSOR, EXECUTE

Press CURSOR (↓/↑) to move the cursor (►) to LANGUAGE, then press EXECUTE.




**3** CURSOR, EXECUTE

Press CURSOR (↓/↑/←/→) to move the cursor (►) to the desired language, then press EXECUTE.

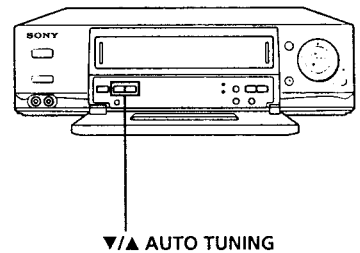
The menu disappears from the TV screen and the on-screen display is set to your language.





# Step 4

## Tuning the VCR to TV channels






**1**

Set the TV to the video channel:

- If the TV is connected to the VCR using only the aerial cable, the TV should already be set to the programme position for the VCR.
- If the TV is connected to the VCR using the EURO-AV cable, set the TV to video input.

**2** ▽ △ AUTO FINE TUNING

Open the front panel of the VCR and press AUTO TUNING ▼ and ▲ together for 2 to 3 seconds.

The VCR begins tuning in channels automatically. When all the available channels are tuned in, the channel in programme position 1 is displayed.

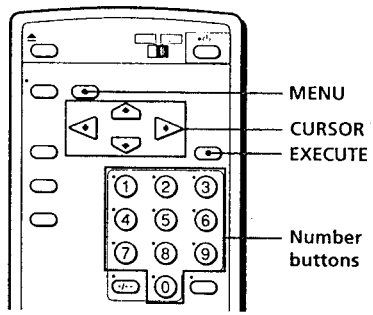
### To switch programme positions

If the allocation of TV channels to programme positions does not match those on your TV, switch positions as follows.

1 Open the front panel on the VCR and press TUNER PRESET.
2 Press PROGRAM +/– to select the programme position you want to switch.
3 Press the number buttons on the remote commander to enter the other programme position.
4 Press EXECUTE on the remote commander.
5 Press TUNER PRESET.

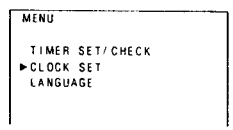
# Step 5

## Setting the clock




**1** MENU / EXECUTE

Press MENU, then select CLOCK SET and press EXECUTE.

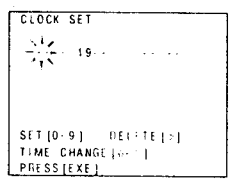



**2** ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⓪

Press the number buttons to set today's day, month and year.

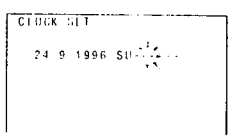
For a single digit number, press the number button 0 before entering the number. The day of the week is set automatically.

If you make a mistake, press CURSOR (←).




**3** ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⓪

Press the number buttons to set the hour and minute.




**4** EXECUTE

Press EXECUTE to start the clock.

The clock starts running from zero seconds.

### To adjust to Summer Time

1 Press MENU, then select CLOCK SET and press EXECUTE.
2 Press CURSOR (↓/↑) to move the time one hour ahead or behind.
3 Press EXECUTE.



1-3

# Additional tuning instructions

### To improve the picture of a TV channel

1 Open the front panel on the VCR and press TUNER PRESET.
2 Press PROGRAM +/– to select the programme position for which you cannot obtain a clear picture.
3 Press FINE TUNING (▼/▲) to adjust to the clearest picture.
4 Press TUNER PRESET.

### To tune in a specific TV channel manually

TV channels with weak signals may not be tuned in automatically. In this case, tune in the channel you want manually.

1 Open the front panel on the VCR and press TUNER PRESET.
2 Press PROGRAM +/– to select the programme position.
3 Press SEARCH. The VCR starts searching for a channel and displays the first one it finds on the TV screen. Press SEARCH repeatedly until the channel you want is displayed.
4 To tune other channels, repeat steps 2 and 3.
5 Press TUNER PRESET.

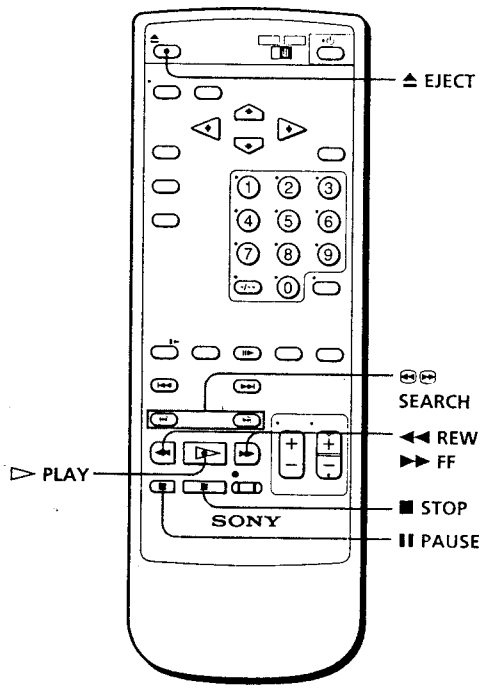
### To erase unwanted programme positions

Positions that are erased will be skipped later when you press the PROGRAM +/– buttons.

1 Open the front panel on the VCR and press TUNER PRESET.
2 Press PROGRAM +/– to select the programme position you want to erase.
3 Press ERASE. The indication "S" appears in the display window.
4 To erase other positions, repeat steps 2 and 3.
5 Press TUNER PRESET.

To restore an erased position, press ERASE in step 3 so that "S" disappears.

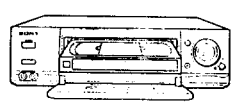
# Playing a tape




**1** Turn on your TV and set it to the video channel.

**2** Open the front panel and insert a tape.

The VCR turns on automatically. The tape starts playing if its safety tab has been removed.



**3** PLAY ▷

Press ▷ PLAY.

When the tape reaches the end, it will rewind automatically.

## Additional tasks

| To | Press |
|---|---|
| Stop play | ■ STOP |
| Pause play | II PAUSE |
| Resume play after pause | II PAUSE or ▷ PLAY |
| Search forward | ⏩ SEARCH during playback |
| Search backward | ⏪ SEARCH during playback |
| Fast-forward the tape | ▶▶ FF during stop |
| Rewind the tape | ◀◀ REW during stop |
| Eject the tape | ⏏ EJECT |

### To use the tape counter

At the point on the tape that you want to find later, press COUNTER RESET. The counter in the display window resets to "0H00M00S." Search for this point afterwards by referring to the counter.

To display the counter on the screen, press DISPLAY.

**Tip**

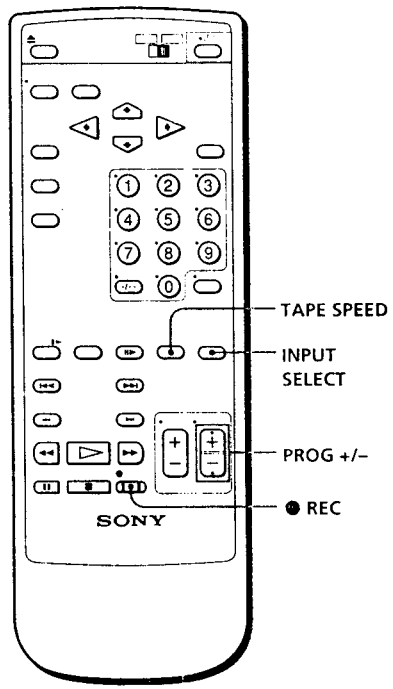
- You can operate a Sony TV with the remote commander just by switching TV/VTR to TV. Buttons marked with a dot (•) double as TV controls.

**Notes**

- Tapes recorded in the LP mode on other VCRs can be played back on this VCR but noise may appear on the screen.
- The counter resets to "0H00M00S" whenever a tape is reinserted.
- The counter stops counting when it comes to a portion with no recording.
- The counter does not appear on the screen during still mode, slow-motion playback or search.

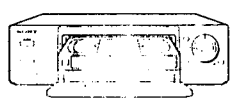
1-4

# Recording TV programmes



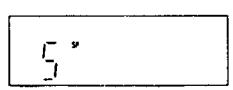

**1** Turn on your TV and set it to the video channel.

**2** Insert a tape.

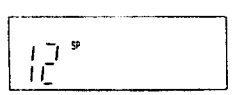


**3** INPUT SELECT

Press INPUT SELECT until a programme position appears in the display window.



**4** Press PROG +/– to select the programme position you want to record.



**5** TAPE SPEED

Press TAPE SPEED to select the tape speed, SP or LP.

LP provides recording time twice as long as SP, however, SP produces better picture quality.

**6** ●REC

Press ● REC to start recording.

### To stop recording

Press ■ STOP.

### To watch another TV programme while recording

1 Press TV/VTR to turn off the VTR indicator in the display window.
2 If the TV is connected to the VCR's EURO-AV input, set the TV to TV input; if not, skip this step.
3 Select another programme position on the TV.

### To save a recording

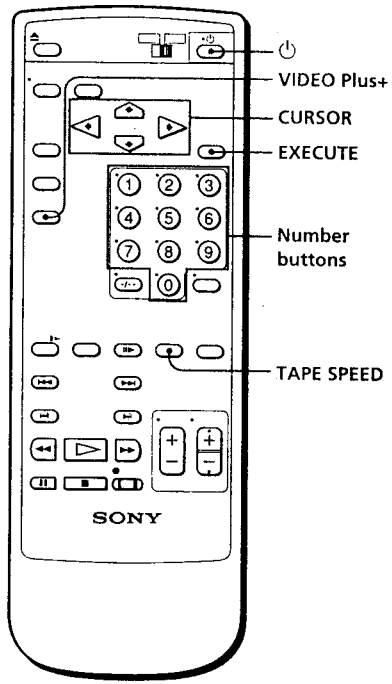
To prevent accidental erasure, break off the safety tab as illustrated. To record on a tape again, cover the tab hole with adhesive tape.

**Tips**

- To select a programme position, you can use the number buttons on the remote commander. For two-digit numbers, press the -/-- (ten's digit) button followed by the number buttons.
- To record from other equipment connected with a Euro-AV connector, in step 3, press INPUT SELECT to display "AV" in the display window.
- If you don't want to watch TV while recording, you can turn off the TV.

1-5

# Recording TV programmes using VIDEO Plus+



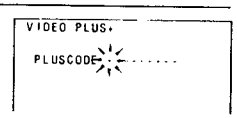

Just enter the programme's "PlusCode" listed in the TV programme guide. The date and times are set automatically. You can preset up to six programmes within a one year time frame.

### Before you start

- Turn on your TV and set it to the video channel.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.

**1** VIDEO Plus+

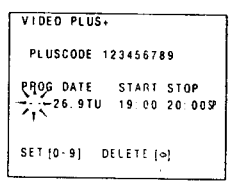
Press VIDEO Plus+.




**2** ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⓪

Press the number buttons to enter the programme's PlusCode, then press EXECUTE.

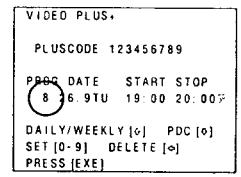
If you make a mistake, press CURSOR (←) and enter the correct number.




**3** ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⓪

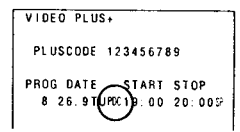
Press the number buttons to set the programme position that corresponds to the TV programme.

- You do not have to set the programme position for the same programme position from the next time.
- If you have changed the preset programme positin, press CURSOR (←) and enter the correct number.




**4** CURSOR

Press the CURSOR (↓) buttons to set PDC on or off .

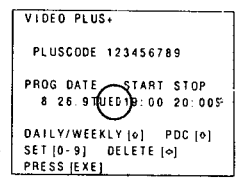



**5** CURSOR

Select how often you want to record by pressing CURSOR (↑).

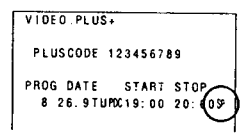
- To record the same programme every day, select ED.
- To record the same programme Monday to Friday, select M-F.
- To record on the same day every week, select WK.

If you want to change the STOP time, press PROG +/– buttons. The digits will increase or decrease by 10 minutes.




**6** TAPE SPEED

Press TAPE SPEED to select SP or LP.




**7** EXECUTE

Press EXECUTE.

**8** •⏻

Press ⏻ to turn off the VCR.

TIMER indicator on the VCR lights up.



continued

## Recording TV programmes using VIDEO Plus+ (continued)

### To stop recording

Press ■ STOP.

### To use the VCR after setting the timer

To use the VCR before a timer recording begins, just press ⏻. The TIMER indicator turns off and the VCR switches on. Remember to press ⏻ to reset the VCR after using the VCR.
You can also do the following tasks while the VCR is recording:
- Reset the counter.
- Display tape information on the TV screen.
- Check the timer settings.
- Watch another TV programme.

### To use the VCR connected to the EURO-AV input

In step 3, press INPUT SELECT to display "AV" instead of selecting a programme position.

### About PDC signals

The broadcast system may transmits PDC (Programme Delivery Control) signals with its TV programmes. These signals ensure that your timer recordings are made regardless of broadcast delays, early starts or broadcast interruptions. When setting the timer, make sure to enter the start and stop times exactly as indicated in the TV programme guide, otherwise the PDC function will not work.

**Tip**
- To cancel the procedure, press VIDEO Plus+ before pressing EXECUTE.

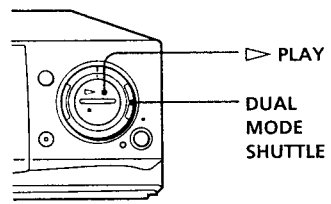
**Notes**
- When you press VIDEO Plus+, the following menus may appear instead of the VIDEO Plus+ menu:
  - The clock setting menu appears if you need to set the clock.
  - The TIMER SET/CHECK menu appears if you have already set six programmes.
- When recording satellite broadcasts programmes, remember to keep the tuner switched on until the VCR finishes recording.

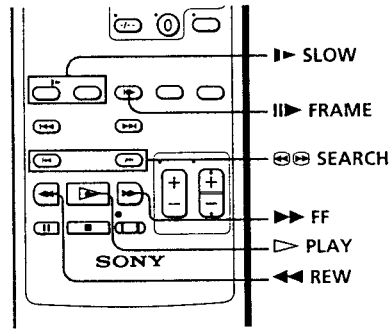






# Playing/searching at various speeds




**Tip**
- Adjust the picture using the ▼ TRACKING ▲ STILL ADJUST buttons if:
  - Streaks appear while playing in slow motion.
  - The picture shakes while pausing.

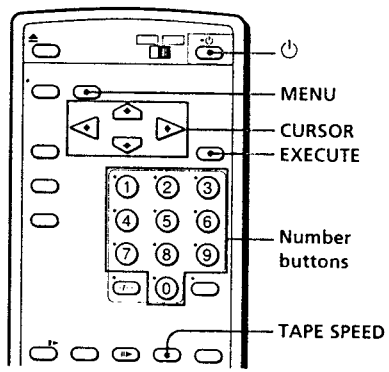
**Notes**
- The sound is muted during these operations.
- Streaks or snow may appear or there may be no colour during these operations.
- If a picture is played in slow motion for over five minutes, the VCR automatically switches to normal playback.

| Playback options | Operation |
|---|---|
| Play at high speed | During playback or pause:<br>• Press ⏪ SEARCH or ⏩ SEARCH, or<br>• Turn the DMS (DUAL MODE SHUTTLE) ring on the VCR to ⏪ or ⏩. Release the ring to resume playback or pause. |
| Fast-forward/ rewind | During stop:<br>• Press ►► FF or ◄◄ REW, or<br>• Turn the DMS ring to ◄◄ REW or ►► FF and release. |
| View the picture during fast-forward or rewind | During fast-forward, turn the DMS ring to ►► FF. During rewind, turn the ring to ◄◄ REW. Release the ring to resume fast-forward or rewind.<br>With the remote commander:<br>• During fast-forward, press ►► FF again.<br>• During rewind, press ◄◄ REW again. |
| Play in slow motion | During playback or pause, press ▮► SLOW +/–. Press + to increase the speed and – to decrease the speed. |
| Play frame by frame | During pause, press II► FRAME. |

### To resume normal playback

Press ▷ PLAY.

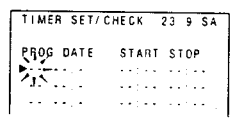
# Setting the timer manually




To set the timer manually, follow the instructions below.

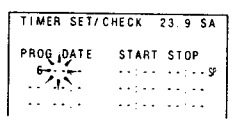
**1** Press MENU and select TIMER SET/CHECK.

If the clock needs to be set, the VCR automatically displays the clock setting screen.



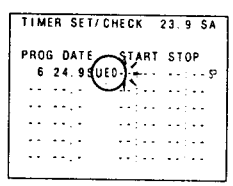

**2** Select the programme position by pressing the number buttons.

If you make a mistake, press CURSOR (←) and enter the correct number.

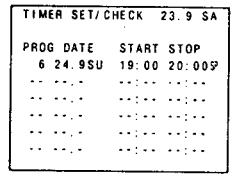



**3** Set the date and month to start recording by pressing the number buttons.

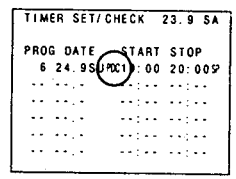
- To record the same programme, press CURSOR (↑) to select ED.
- To record the same programme, Monday to Friday, press CURSOR (↑) to select M-F.
- To record on the same day every week, press CURSOR (↑) to select WK.



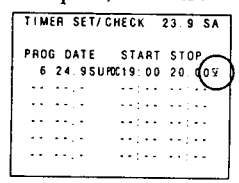

**4** Set the times to start and stop recording by pressing the number buttons.




**5** Press CURSOR (↓) to set PDC on or off.

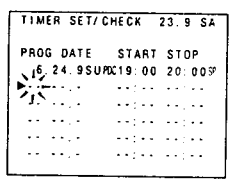



**6** Press TAPE SPEED to select the speed, SP or LP.




**7** Press EXECUTE.

The cursor (▶) reappears at the top of the next line. To set another timer setting, repeat steps 2 to 7.




**8** Press MENU to return to the normal screen, and then press ⏻ to turn off the VCR.

The TIMER indicator on the VCR lights up and the VCR stands by for recording.

**Tips**

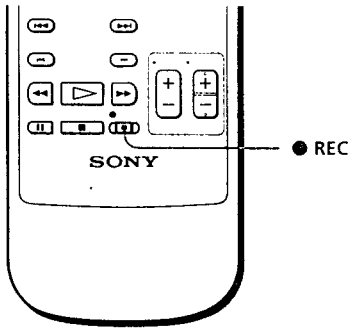
- For a single digit number, press the 0 button before entering the number.
- To record from other equipment connected with a EURO-AV connector, in step 2, press INPUT SELECT to display "AV" in the "PROG" position.

**Notes**

- When the tape reaches the end during recording, recording stops and the VCR turns off.
- The TIMER indicator on the VCR flashes in the following cases:
  - When you press ⏻ with no tape inserted.
  - When you use the VCR up to five minutes before timer recording starts.

1-8

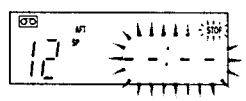
# Recording TV programmes using the quick timer




After starting recording in the normal way, you can have the VCR stop recording automatically after a specified duration.

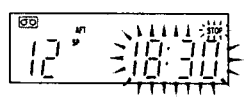
**1** While recording, press ● REC twice.

"STOP - - - -" flashes.



**2** Press ● REC repeatedly to set the duration.

Each press advances the time in increments of 30 minutes.



### To check or extend the duration

Press ● REC once. The duration is displayed for 10 seconds. If you want to extend the time, press ● REC within the 10 seconds to set to the new duration.

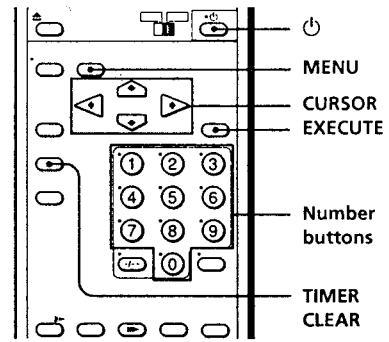
### To stop recording

Press ■ STOP.

**Notes**

- You cannot cancel the timer setting which has already started recording.
- If the programme with PDC overlaps other programmes without PDC, the programme with PDC has priority. Other programmes will be cut off.

# Checking/ cancelling timer settings




**1** Press ⏻ to turn on the VCR.

**2** Press MENU and select TIMER SET/CHECK:

- If you want to cancel a setting, go to the next step.
- If you want to check a setting and do not need to cancel it, press MENU, then press ⏻ to return to recording standby.

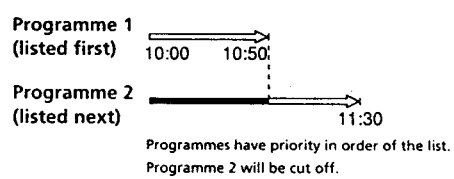
**3** Press the CURSOR (↑/↓) buttons to select the setting you want to cancel, then press TIMER CLEAR.

**4** Press MENU.

If any settings remain, press ⏻ to return to recording standby.

### When the timer settings overlap

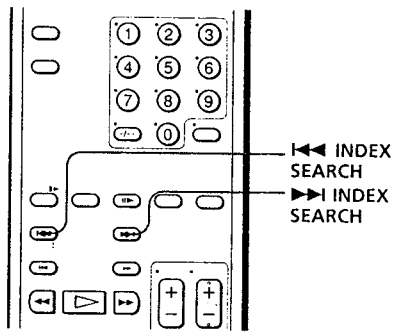
The VCR will not record overlapping programmes. If any of your settings overlap, change them.




Programmes have priority in order of the list.
Programme 2 will be cut off.

1-9

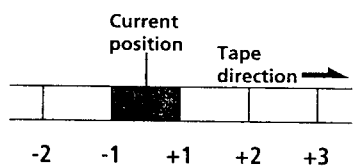
# Searching using the index function



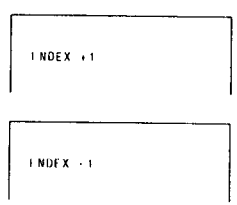

The VCR marks the tape with index signals every time you start to record to help you search for a recording later on.

Press ▶▶I INDEX SEARCH to search ahead or I◀◀ INDEX SEARCH to search backwards during playback or stop.

By pressing ▶▶I INDEX SEARCH or I◀◀ INDEX SEARCH repeatedly, you can specify how many index signals ahead or behind the specific index signal is from the current position.




Each time an index signal is detected, the index number decreases by 1. When it reaches "INDEX +1 ( or –1)", playback starts automatically.




### To stop index search

Press ■ STOP.

**Tip**

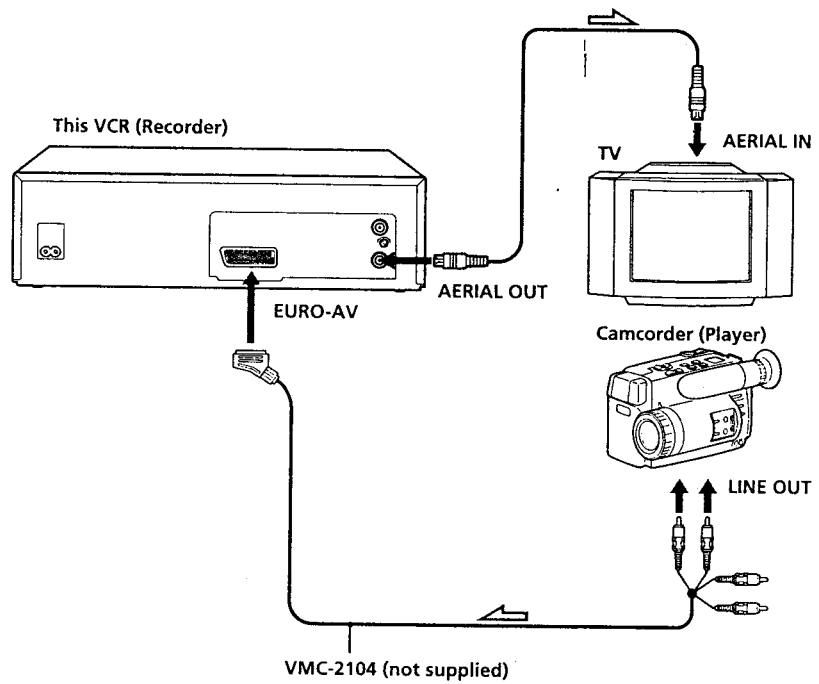
- The VCR can search up to 99 index signals ahead or behind the current position.





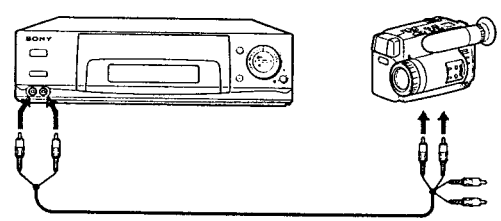
# Editing with another VCR

How to hook up to record on this VCR



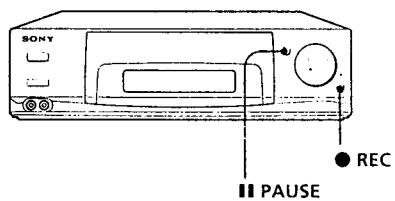

:Signal flow

You can also connect to the jacks on the front panel.



continued

### Operation when recording on this VCR




**Before you start editing**

- Press INPUT SELECT to display "AV" in the display window.
- When this VCR is connected to the line in jack on the front panel, "L" is displayed in the display window.
- Press TAPE SPEED to select the recording tape speed (SP or LP).

1 Insert a source tape into the other (playback) VCR. Search for the point to start playback and set to playback pause.

2 Insert a tape into this (recording) VCR. Search for the point to start recording and press II PAUSE.

3 Press ● REC on this VCR and set it to recording pause.

4 To start editing, press the II PAUSE buttons on both VCRs and release pause.

**To stop editing**

Press the STOP buttons on both VCRs.

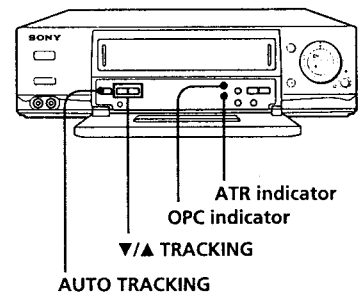
**Tips**

- To edit more precisely, use the II PAUSE buttons on the VCRs to release pause and start editing.
- To cut out unwanted scenes, press II PAUSE on this VCR when an unwanted scene begins. When it ends, press II PAUSE again to resume recording (Assemble Editing).

1-11



# Adjusting the picture




## Adjusting the tracking

Although the VCR automatically adjusts the tracking when playing a tape, distortion may occur if the tape was recorded in poor condition. If so, manually adjust the tracking.

Press the ▼/▲ TRACKING buttons to adjust to the clearest picture. If you cannot get a clear picture manually, press the AUTO TRACKING button to return to automatic adjustment. In this case, the ATR indicator flashes.

## About "Trilogic" Optimum Picture Control (OPC)

"Trilogic" Optimum Picture Control (OPC) automatically improves recording and playback quality by adjusting the VCR to the condition of the video heads and tape.

**"Trilogic" OPC playback**

The "Trilogic" OPC function automatically works on all types of tapes, including rental tapes and tapes that were not recorded with "Trilogic" OPC.

**"Trilogic" OPC recording**

Whenever you insert a tape and first start recording, the VCR adjusts to the tape using the "Trilogic" OPC function (the "Trilogic" OPC indicator on the VCR flashes rapidly). This adjustment is retained until the tape is ejected.

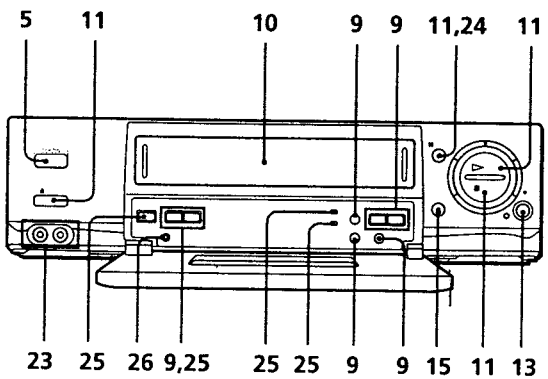
**Note**

- There is a delay of a few seconds before the VCR actually starts recording while the VCR analyses the tape.

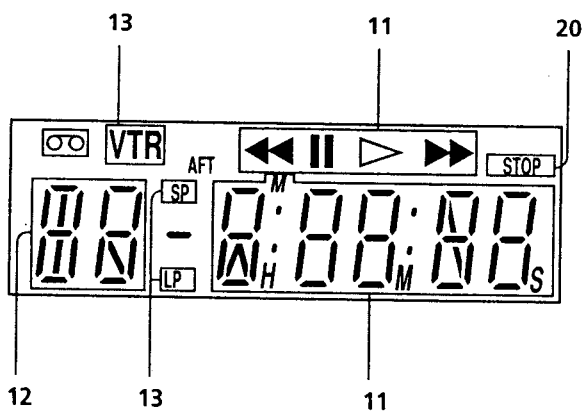
# Visual index

Refer to pages indicated for details.

## Front panel




## Display window



# SECTION 2
# DISASSEMBLY

## 2-1. REMOVAL OF CABINET, MECHANISM UNIT, AND MAIN BOARD

### REMOVING THE CABINET PARTS (Fig. 1-1-1)

1. Remove the cabinet and bottom cover by removing the four screws ① and four screws ②.
2. Pull out the shuttle knob by fingers together with the button assembly, and remove the front panel by removing the locks of the clamps (A) using a screwdriver, etc., and slightly rotating the bottom part in the direction of the arrow.

**Notes:**
- Electrical adjustments for the this model can be performed with only the cabinet removed.
- When replacing the bottom cover, do not tighten the screws ② too much. Excess tightness may damage the screw taps on the chassis.

### REMOVING THE MECHANISM MAIN UNIT AND THE CP-1 PWB ASSEMBLY (Fig.1-1-2 and 1-1-3)

After removing the cabinet parts, remove the mechanism unit and the CP-1 PWB assembly connected as follows.

1. First, remove the red screw ③ of the TB-1 PWB, spread out lock clamps (B) and (C) in the arrow direction slightly and remove TM-1 PWB and TM-2 PWB as shown in Fig. 1-1-2.
2. Remove the screw ④ at the back of the chassis.
3. Remove the red screw ⑤ in the chassis, remove the red screw ⑥, and remove the holder in this order.
4. Remove the two screws ⑦ and two screws ⑧ of the mechanism unit. The two screws ⑧ of the cassette tray can be removed easily by pushing the tray lock lever in the arrow direction to remove the lock as shown in the enlarge view A and by pushing the lid opener lever in the arrow direction to remove the lock as shown in the enlarge view B.
5. Lift up the whole mechanism unit and main board (CP-1 PWB assembly), and as shown in Fig. 1-1-3, push the two lock clamps (D) of the chassis in the arrow direction so that they can be removed from the chassis.

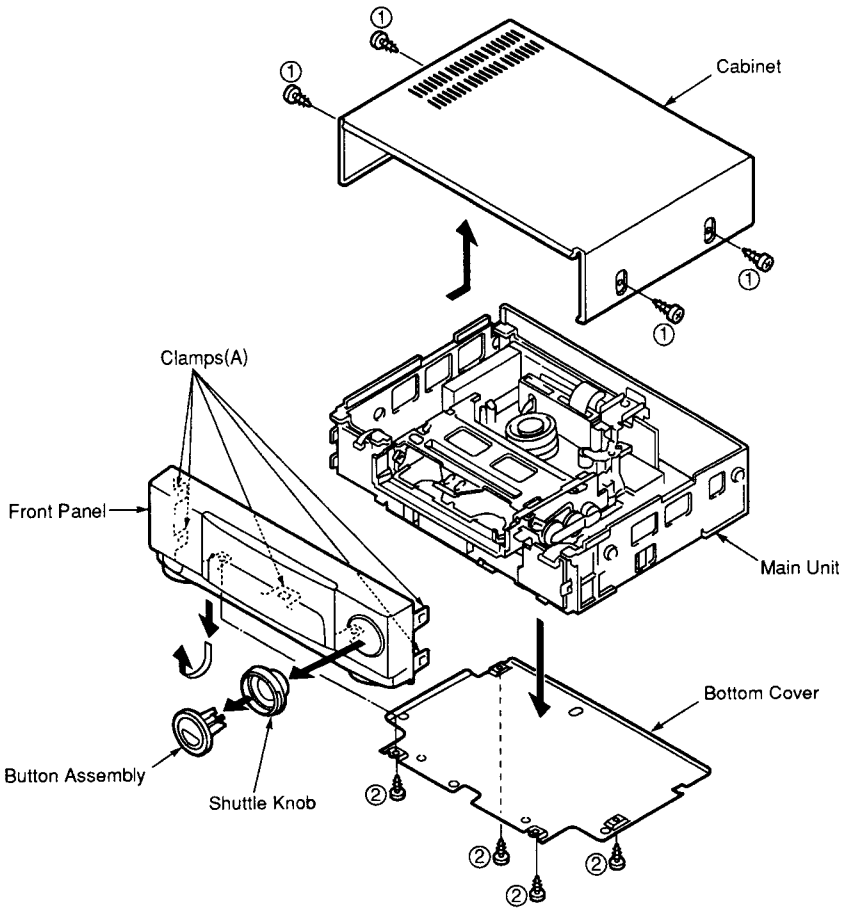



Fig. 1-1-1

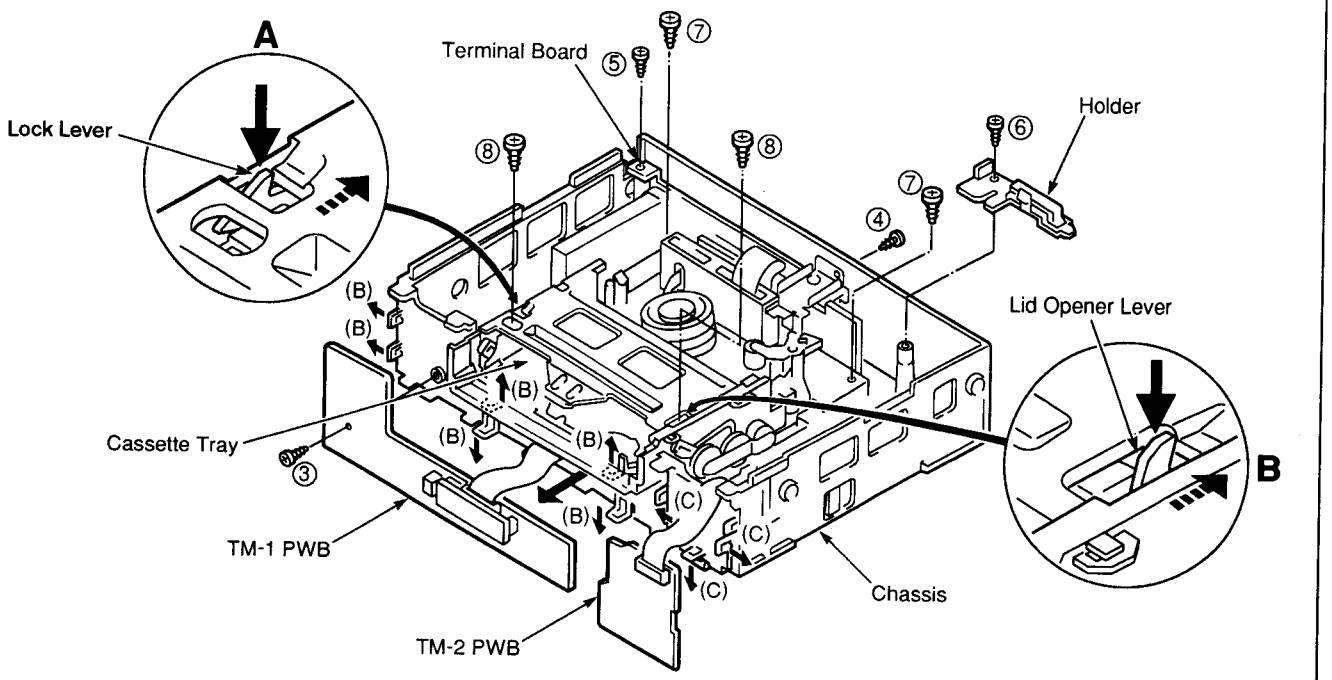



Fig. 1-1-2

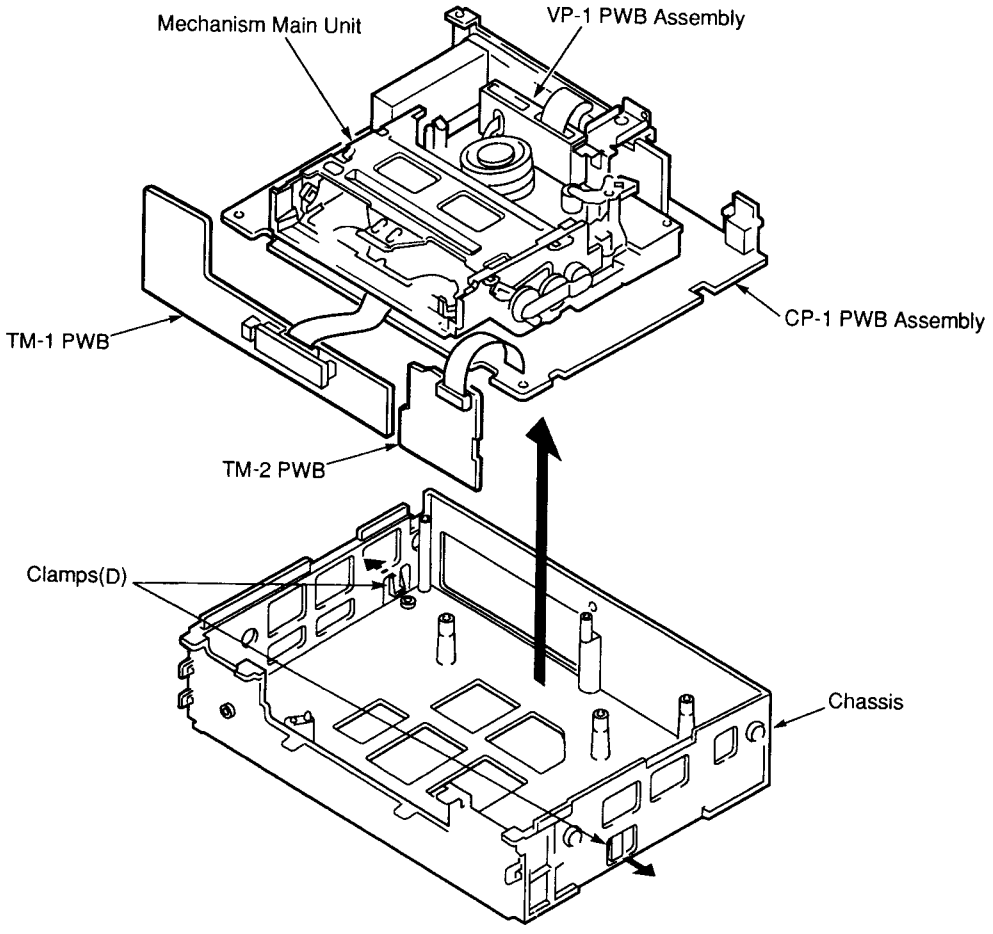



Fig. 1-1-3

## 2-2. TEMPORARILY SETTING UP AND CONNECTING CP-1 PWB ASSEMBLY

The following is an example of how to place and connect the main board without a jig, when repairing the CP-1 PWB assembly.

1. Place the mechanism unit and main board up side down as a whole on a flat surface with the foil side of the main board facing up.
2. Operate the unit using the buttons on TM-1 PWB or the remote control.

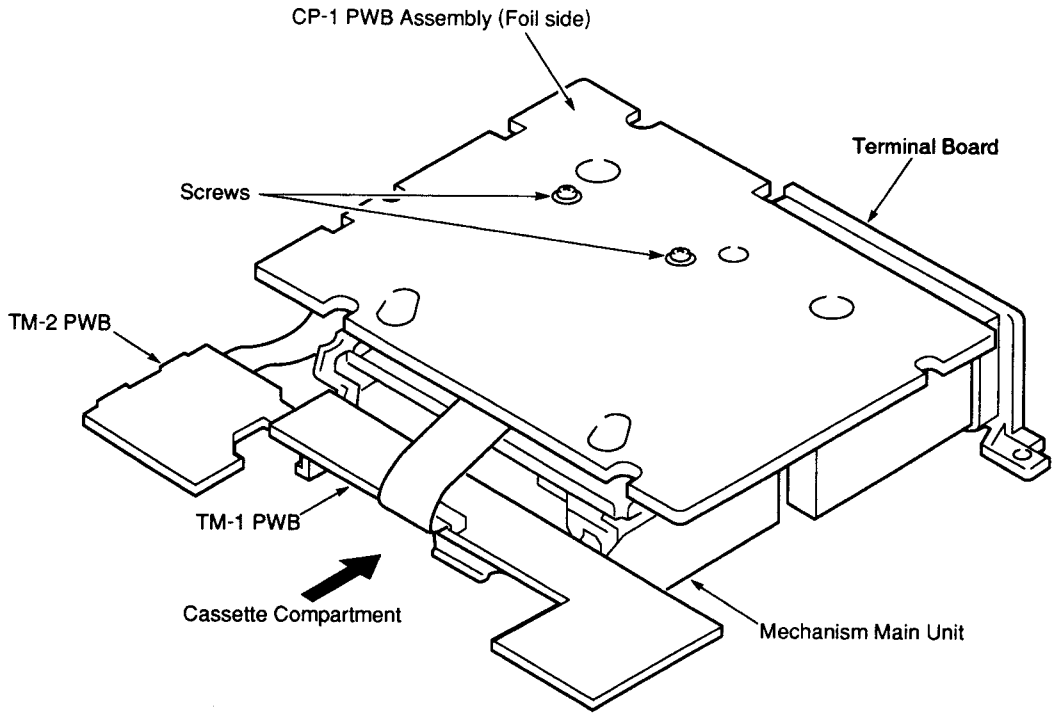



Fig. 1-1-4

## 2-3. INSTALLATION OF THE FRONT PANEL

When installing the front panel to the chassis after repaires and adjustments.

1. Pressing down the door opener lever of the mechanism main unit.
2. Set the cassette door to half-opened state as shown in Fig.1-1-5, and install the front panel to the chassis.

**Note**: Opened cassette door position does not install the front panel to the chassis.

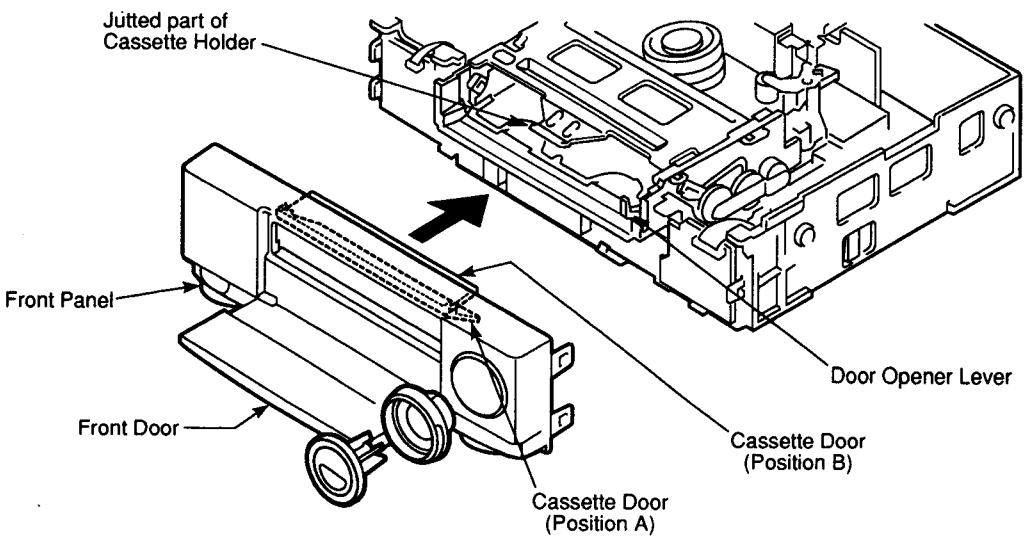
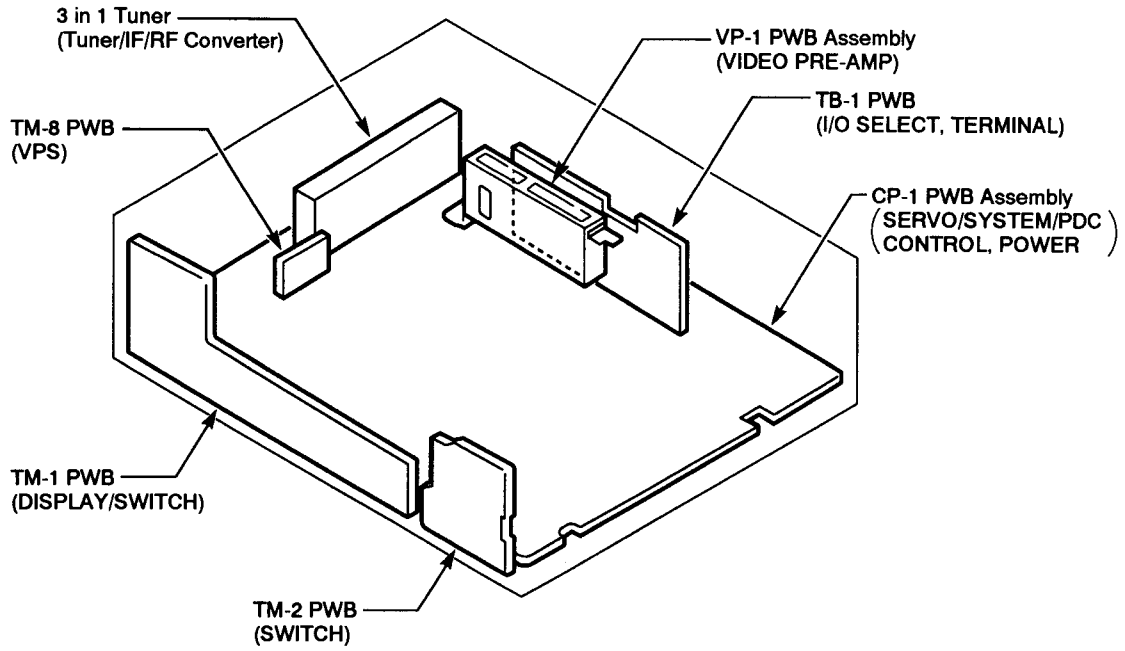


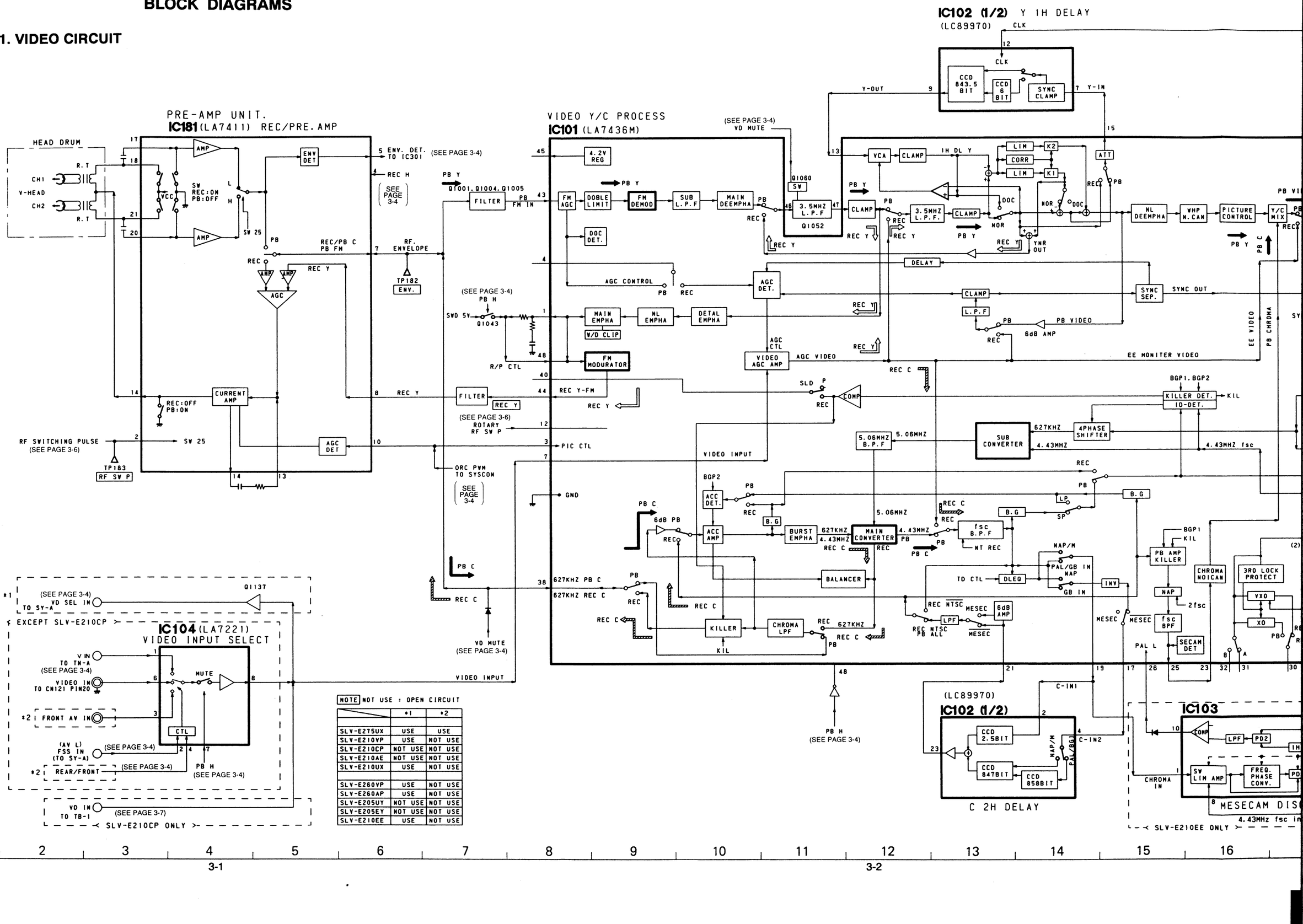

Fig. 1-1-5

## 2-4. CIRCUIT BOARD LOCATIONS



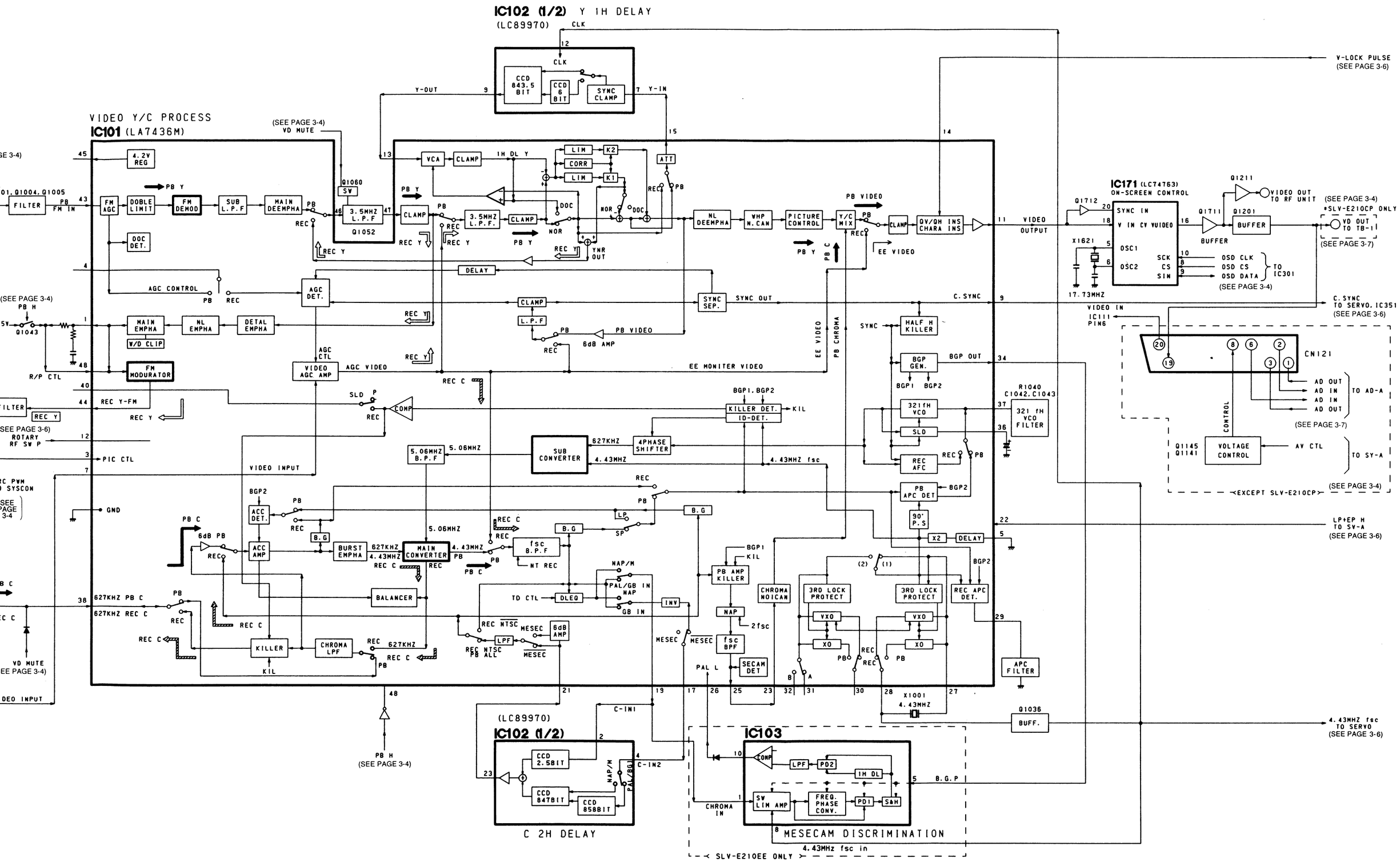
# SECTION 3
# BLOCK DIAGRAMS

## 3-1. VIDEO CIRCUIT

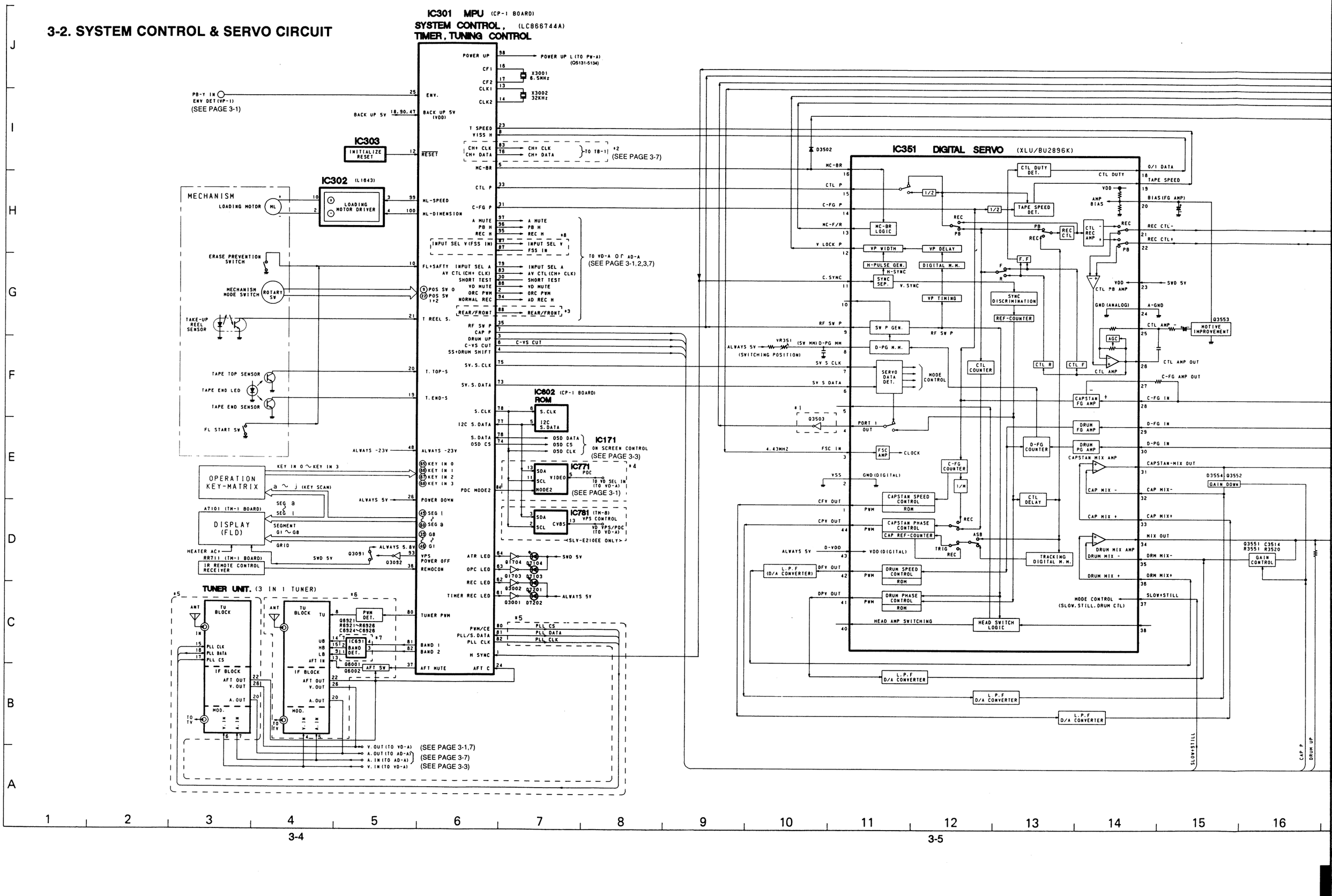



NOTE NOT USE : OPEN CIRCUIT

| | *1 | *2 |
|---|---|---|
| SLV-E275UX | USE | USE |
| SLV-E210VP | USE | NOT USE |
| SLV-E210CP | NOT USE | NOT USE |
| SLV-E210AE | NOT USE | NOT USE |
| SLV-E210UX | USE | NOT USE |
| | | |
| SLV-E260VP | USE | NOT USE |
| SLV-E260AP | USE | NOT USE |
| SLV-E205UY | NOT USE | NOT USE |
| SLV-E205EY | NOT USE | NOT USE |
| SLV-E210EE | USE | NOT USE |


IC102 (1/2) Y 1H DELAY
(LC89970)
CLK
CCD 643.5 BIT
CCD 8 BIT
SYNC CLAMP
Y-OUT
Y-IN
V-LOCK PULSE
(SEE PAGE 3-6)
VIDEO Y/C PROCESS
IC101 (LA7436M)
(SEE PAGE 3-4)
VD MUTE
4.2V REG
FILTER
PB FM IN
FM AGC
DOBLE LIMIT
FM DEMOD
SUB L.P.F
MAIN DEEMPHA
3.5MHZ L.P.F
Q1052
Q1060
SW
VCA
CLAMP
1H DL Y
LIM
K2
CORR
K1
ATT
DOC
NOR
YNR OUT
NL DEEMPHA
WHP N.CAN
PICTURE CONTROL
Y/C MIX
QV/QH INS CHARA INS
VIDEO OUTPUT
IC171 (LC74763)
ON-SCREEN CONTROL
SYNC IN
V IN CV VUIDEO
OSC1
OSC2
SCK
CS
SIN
OSD CLK
OSD CS
OSD DATA
TO IC301
X1621
17.73MHZ
Q1211
Q1712
Q1711
Q1201
BUFFER
VIDEO OUT TO RF UNIT
*SLV-E210CP ONLY
YD OUT TO TB-11
DOC DET.
AGC CONTROL
AGC DET.
DELAY
SYNC SEP.
SYNC OUT
C. SYNC
C. SYNC TO SERVO, IC351
VIDEO IN IC111 PIN6
MAIN EMPHA
NL EMPHA
DETAL EMPHA
W/D CLIP
Q1043
R/P CTL
FM MODURATOR
VIDEO AGC AMP
AGC VIDEO
AGC CTL
CLAMP
L.P.F
6dB AMP
PB VIDEO
EE MONITER VIDEO
EE VIDEO
PB CHROMA
SYNC
HALF H KILLER
BGP GEN.
BGP OUT
BGP1 BGP2
CN121
AD OUT
AD IN
AD IN
AD OUT
TO AD-A
(SEE PAGE 3-7)
CONTROL
VOLTAGE CONTROL
Q1145 Q1141
AV CTL
TO SY-A
EXCEPT SLV-E210CP
REC Y-FM
REC Y
ROTARY RF SW P
PIC CTL
VIDEO INPUT
SLD P
COMP
KILLER DET. ID-DET.
KIL
5.06MHZ B.P.F
5.06MHZ
SUB CONVERTER
627KHZ
4.43MHZ
4PHASE SHIFTER
4.43MHZ fsc
321fH VCO
SLD
REC AFC
PB APC DET
90° P.S
X2
DELAY
LP+EP H TO SV-A
(SEE PAGE 3-6)
R1040 C1042, C1043
321 fH VCO FILTER
GND
ACC DET.
ACC AMP
BURST EMPHA
MAIN CONVERTER
fsc B.P.F
NT REC
B.G
LP
SP
5.06MHZ
6dB PB
627KHZ PB C
627KHZ REC C
BALANCER
TO CTL
DLEQ
NAP/M
PAL/GB IN
MAP
GB IN
INV
KILLER
CHROMA LPF
REC NTSC
MESEC
6dB AMP
PB ALL
PB AMP KILLER
NAP
2fsc
fsc BPF
SECAM DET
PAL L
CHROMA NOICAM
3RD LOCK PROTECT
VXO
XO
REC APC DET.
APC FILTER
X1001
4.43MHZ
Q1036
BUFF.
4.43MHZ fsc TO SERVO
(SEE PAGE 3-6)
PB H
(SEE PAGE 3-4)
(LC89970)
IC102 (1/2)
CCD 2.5BIT
CCD 847BIT
CCD 858BIT
C-IN1
C-IN2
C 2H DELAY
IC103
COMP
LPF
PD2
1H DL
SW LIM AMP
FREQ. PHASE CONV.
PD1
S&H
CHROMA IN
B.G.P
MESECAM DISCRIMINATION
4.43MHz fsc in
SLV-E210EE ONLY

## 3-2. SYSTEM CONTROL & SERVO CIRCUIT



BOARD)

(LC866744A)

TROL

POWER UP L (TO Pw-A)
(Q5131-5134)

X3001
6.5MHz

X3002
32KHz

CM+ CLK
CM+ DATA
TO T8-1! *2
(SEE PAGE 3-7)

A MUTE
PB H
REC H *8
INPUT SEL V
FSS IN
INPUT SEL A
AV CTL (CM+ CLK)
SHORT TEST
VD MUTE
ORC PWM
AD REC H
REAR/FRONT *3
TO VD-A OR AD-A
(SEE PAGE 3-1,2,3,7)

C-VS CUT

IC802 ROM (CP-1 BOARD)
S.CLK
I2C
S.DATA

OSD DATA
OSD CS
OSD CLK
IC171
ON SCREEN CONTROL
(SEE PAGE 3-3)

IC771 *4
SDA
SCL
MODE2
VIDEO
PDC
TO YD SEL IN (TO VD-A)
(SEE PAGE 3-1)

IC781 (TM-8)
SDA
SCL
CVBS
VPS CONTROL
VD VPS/PDC (TO VD-A)
<SLV-E210EE ONLY>

D704 SWD 5V
D703
D702
D701 ALWAYS 5V

*5
PLL CS
PLL DATA
PLL CLK

C SYNC
RF SW P
LP+EP H *1
FSC(4.43) IN
V LOCK PULSE
TO VD-A
(SEE PAGE 3-1,3)
LP+EP H *1
TO AD-A
(SEE PAGE 3-3,7)

MC-FR
MC-BR

D3502

## IC351 DIGITAL SERVO (XLU/BU2896K)

| | | | |
|---|---|---|---|
| MC-BR | 16 | | |
| CTL P | 15 | | |
| C-FG P | 14 | | |
| MC-F/R | 13 | | |
| V LOCK P | 12 | | |
| C.SYNC | 11 | | |
| | 10 | | |
| RF SW P | 9 | | |
| ALWAYS 5V (SWITCHING POSITION) | VR351 (SW MM) | D-PG MM | 8 |
| SW S CLK | | | 7 |
| SW S DATA | | | 6 |
| | *1 D3503 | PORT 1 OUT | 5 |
| 4.43MHZ | FSC IN | | 3 |
| YSS | GND (DIGITAL) | | 2 |
| CFV OUT | | | 1 |
| CPV OUT | | | 44 |
| ALWAYS 5V | D-VDD | VDD (DIGITAL) | 43 |
| DFV OUT | | | 42 |
| DPV OUT | | | 41 |
| HEAD AMP SWITCHING | | | 40 |
| O/I DATA | | | 18 |
| TAPE SPEED | | | 19 |
| BIAS (FG AMP) | | | 20 |
| REC CTL- | | | 21 |
| REC CTL+ | | | 22 |
| SWD 5V | | | 23 |
| A-GND | | | 24 |
| CTL AMP - | | | 25 |
| CTL AMP OUT | | | 26 |
| C-FG AMP OUT | | | 27 |
| C-FG IN | | | 28 |
| D-FG IN | | | 29 |
| D-PG IN | | | 30 |
| CAPSTAN-MIX OUT | | | 31 |
| CAP MIX - | | | 32 |
| CAP MIX + | | | 33 |
| MIX OUT | | | 34 |
| DRM MIX - | | | 35 |
| DRM MIX + | | | 36 |
| SLOW+STILL | | | 37 |
| | | | 38 |

CTL DUTY DET.
1/2
TAPE SPEED DET.
MC-BR LOGIC
REC / PB
REC CTL
CTL REC AMP
VP WIDTH
VP DELAY
H-PULSE GEN.
DIGITAL M.M.
H-SYNC
SYNC SEP.
V. SYNC
VP TIMING
F.F
SYNC DISCRIMINATION
REF-COUNTER
VDD
AMP BIAS
CTL PB AMP
GND (ANALOG)
SW P GEN.
RF SW P
D-PG M.M.
AGC
CTL AMP
MOTIVE IMPROVEMENT
D3553
SERVO DATA DET.
MODE CONTROL
CTL COUNTER
CTL R
CTL F
CAPSTAN FG AMP
DRUM FG AMP
DRUM PG AMP
D-FG COUNTER
C-FG COUNTER
FSC AMP
CLOCK
1/N
CAPSTAN SPEED CONTROL
ROM
CAPSTAN PHASE CONTROL
CAP REF-COUNTER
TRIG
ASB
CTL DELAY
TRACKING DIGITAL M.M.
L.P.F (D/A CONVERTER)
DRUM SPEED CONTROL
DRUM PHASE CONTROL
HEAD SWITCH LOGIC
CAPSTAN MIX AMP
DRUM MIX AMP
D3554 D3552
GAIN DOWN
D3504
D3551 C3514
R3551 R3520
GAIN CONTROL
MODE CONTROL (SLOW, STILL, DRUM CTL)
L.P.F D/A CONVERTER
L.P.F D/A CONVERTER
L.P.F D/A CONVERTER

CTL HEAD
MECHANISM
CAPSTAN-VS
C-FG
CAPSTAN MOTOR
D-PG
D-FG
HEAD DRUM MOTOR

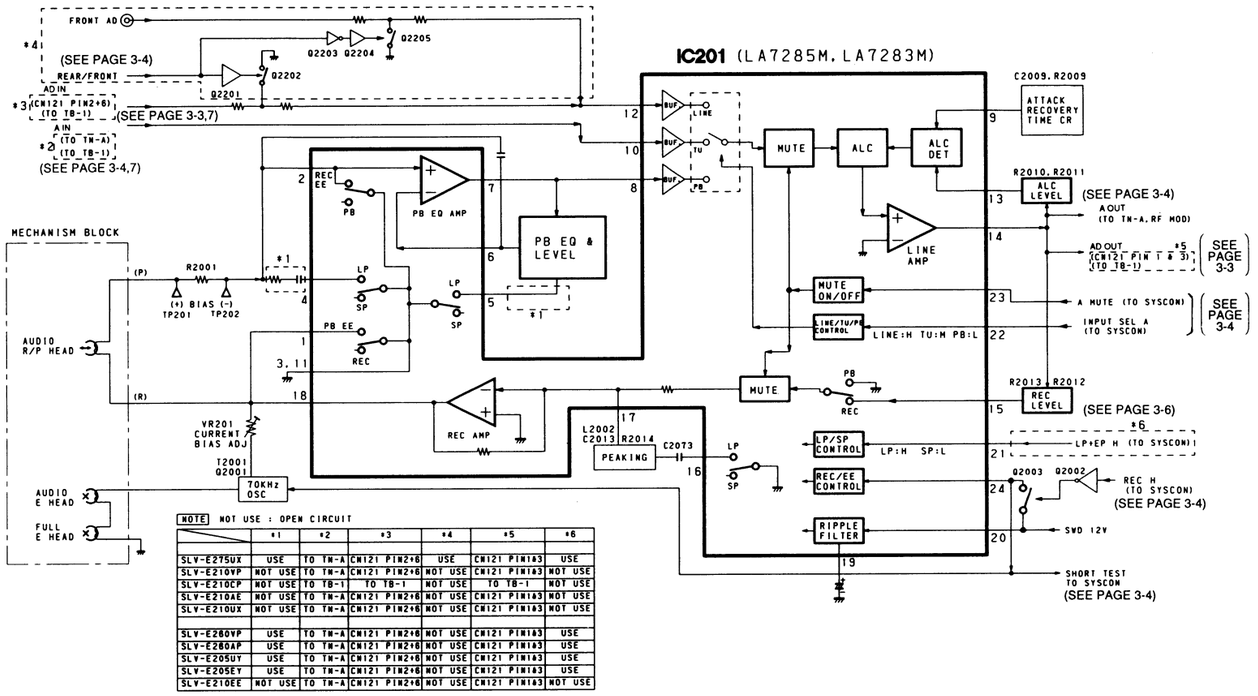
SLOW+STILL
CAP P
DRUM UP
C-VS CUT

NOTE NOT USE : OPEN CIRCUIT

| | *1 | *2 | *3 | *4 | *5 | *6 | *7 | *8 |
|---|---|---|---|---|---|---|---|---|
| SLV-E275UX | USE | NOT USE | USE | USE | NOT USE | USE | NOT USE | INPUT SEL V |
| SLV-E210VP | NOT USE | NOT USE | NOT USE | USE | USE | NOT USE | NOT USE | INPUT SEL V |
| SLV-E210CP | NOT USE | USE | NOT USE | NOT USE | NOT USE | USE | USE | FSS IN |
| SLV-E210AE | NOT USE | NOT USE | NOT USE | NOT USE | USE | NOT USE | NOT USE | INPUT SEL V |
| SLV-E210UX | NOT USE | NOT USE | NOT USE | USE | NOT USE | USE | NOT USE | INPUT SEL V |
| SLV-E280VP | USE | NOT USE | NOT USE | USE | USE | NOT USE | NOT USE | INPUT SEL V |
| SLV-E280AP | USE | NOT USE | NOT USE | USE | USE | NOT USE | NOT USE | INPUT SEL V |
| SLV-E205UY | USE | NOT USE | NOT USE | NOT USE | NOT USE | USE | NOT USE | INPUT SEL V |
| SLV-E205EY | USE | NOT USE | NOT USE | NOT USE | USE | NOT USE | NOT USE | INPUT SEL V |
| SLV-E210EE | NOT USE | NOT USE | NOT USE | NOT USE | NOT USE | USE | USE | INPUT SEL V |

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

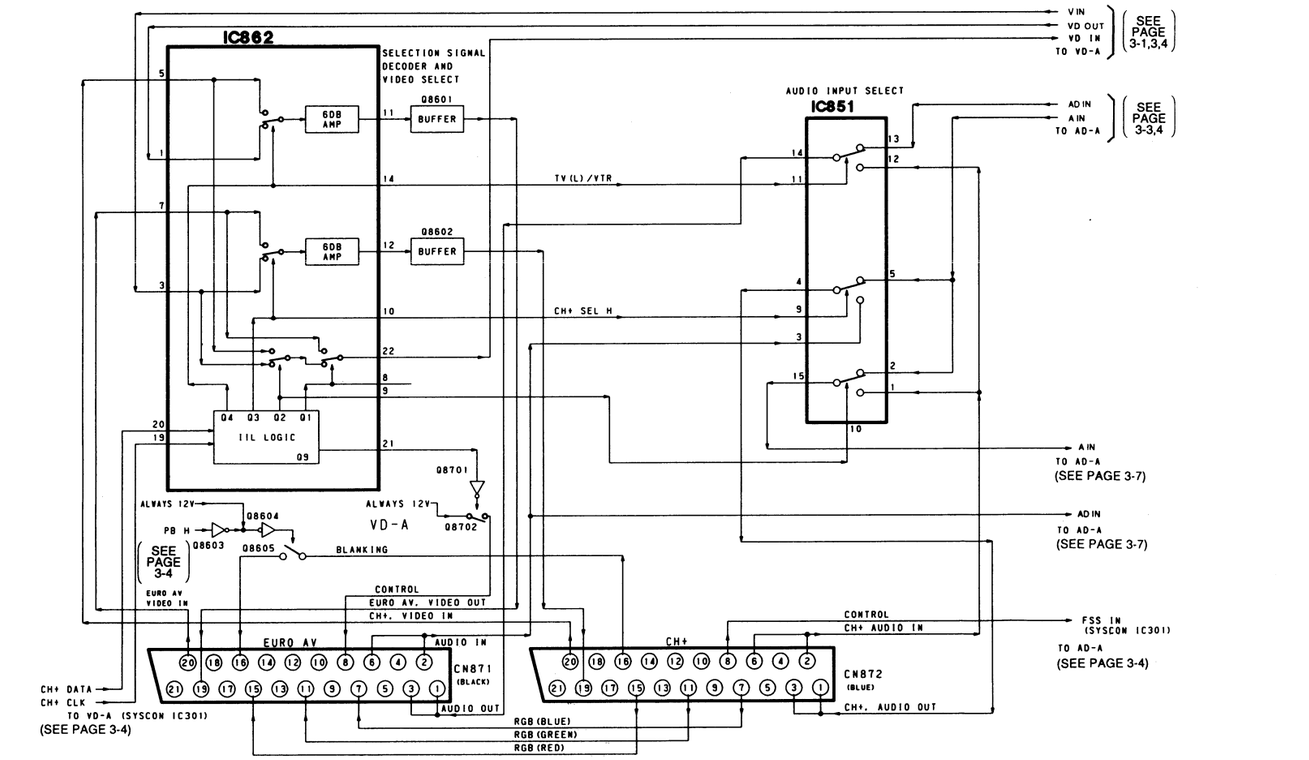
## 3-3. AUDIO CIRCUIT




NOTE NOT USE : OPEN CIRCUIT

| | *1 | *2 | *3 | *4 | *5 | *6 |
|---|---|---|---|---|---|---|
| SLV-E275UX | USE | TO TN-A | CN121 PIN2+6 | USE | CN121 PIN1&3 | USE |
| SLV-E210VP | NOT USE | TO TN-A | CN121 PIN2+6 | NOT USE | CN121 PIN1&3 | NOT USE |
| SLV-E210CP | NOT USE | TO TB-1 | TO TB-1 | NOT USE | TO TB-1 | NOT USE |
| SLV-E210AE | NOT USE | TO TN-A | CN121 PIN2+6 | NOT USE | CN121 PIN1&3 | NOT USE |
| SLV-E210UX | NOT USE | TO TN-A | CN121 PIN2+6 | NOT USE | CN121 PIN1&3 | NOT USE |
| SLV-E280VP | USE | TO TN-A | CN121 PIN2+6 | NOT USE | CN121 PIN1&3 | USE |
| SLV-E280AP | USE | TO TN-A | CN121 PIN2+6 | NOT USE | CN121 PIN1&3 | USE |
| SLV-E205UY | USE | TO TN-A | CN121 PIN2+6 | NOT USE | CN121 PIN1&3 | USE |
| SLV-E205EY | USE | TO TN-A | CN121 PIN2+6 | NOT USE | CN121 PIN1&3 | USE |
| SLV-E210EE | NOT USE | TO TN-A | CN121 PIN2+6 | NOT USE | CN121 PIN1&3 | NOT USE |

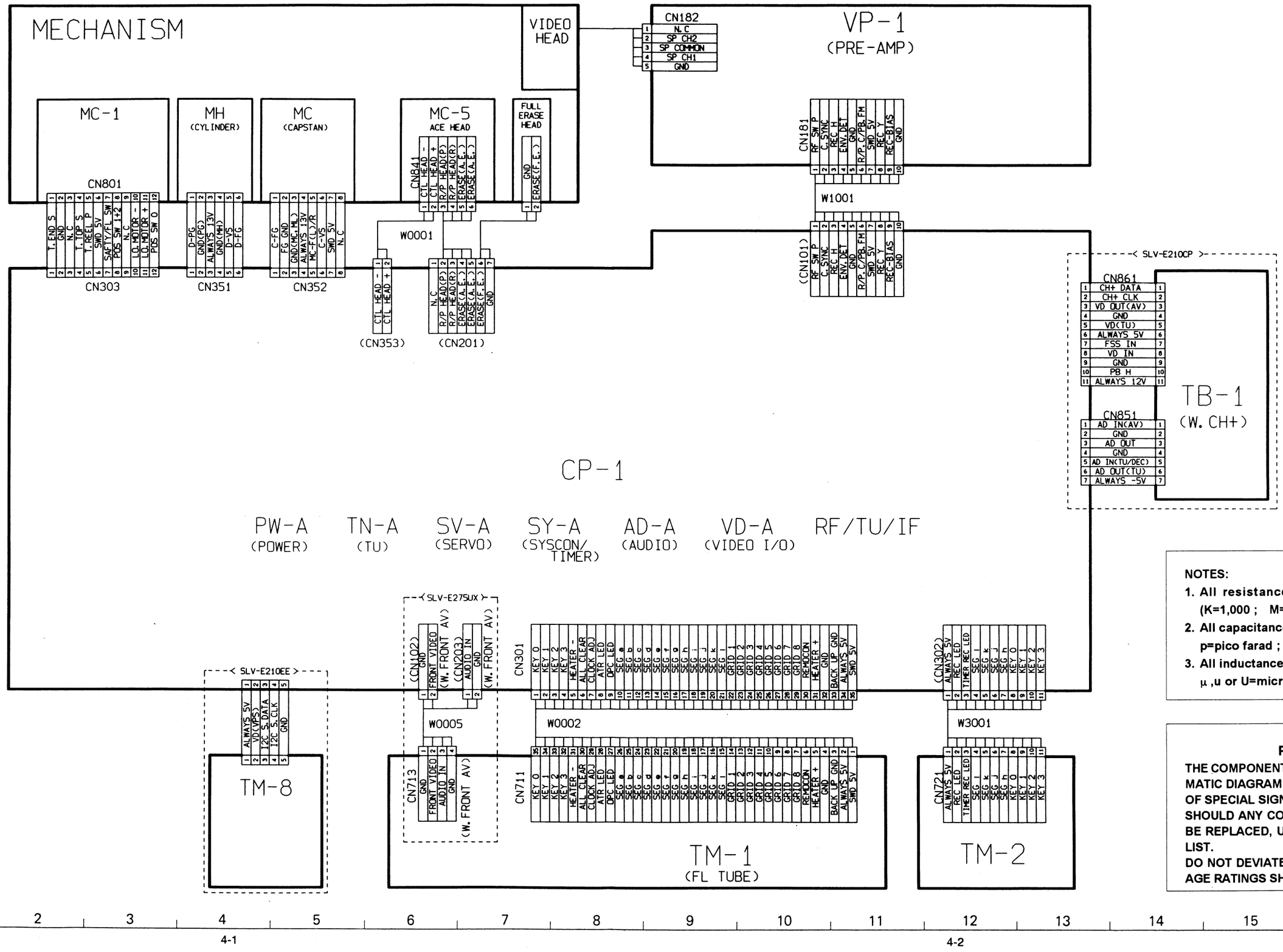
## 3-4. TERMINAL & INPUT/OUTPUT SELECTOR CIRCUIT (SLV-E210CP)



# SECTION 4

# PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

## 4-1. OVERALL WIRING

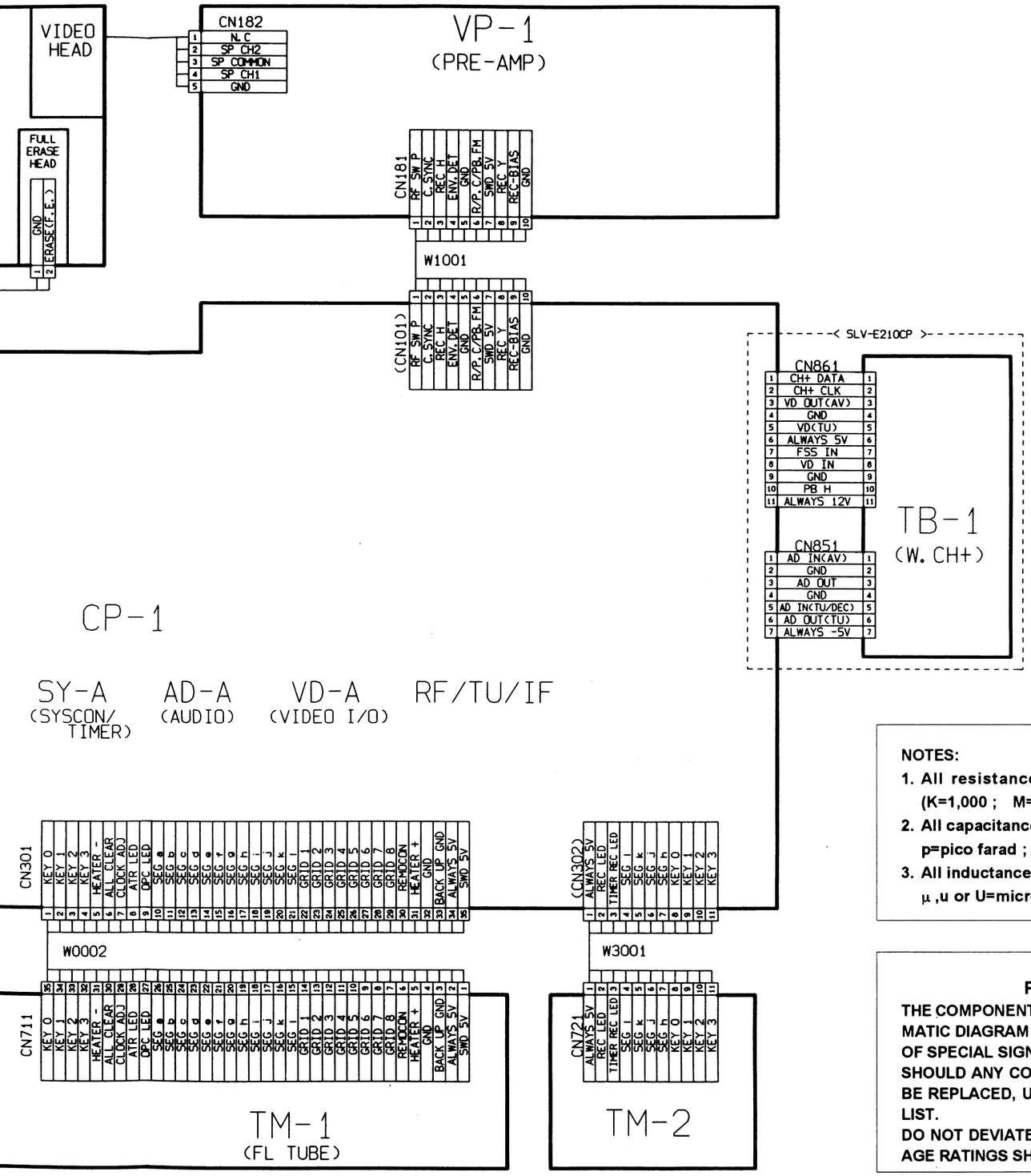



NOTES:

1. All resistance values in "OHMS" unl (K=1,000 ; M=1,000,000)
2. All capacitance values in "μF" unless oth p=pico farad ; μ ,u or U=micro farad
3. All inductance values in "μH" unless oth μ ,u or U=micro henry ; m=milli henry

**PRODUCT SAFETY NOTI**

THE COMPONENTS DESIGNATED BY A SYM MATIC DIAGRAM DESIGNATES COMPONEN OF SPECIAL SIGNIFICANCE TO PRODUCT S SHOULD ANY COMPONENT DESIGNATED B BE REPLACED, USE ONLY THE PART DESI LIST.
DO NOT DEVIATE FROM THE RESISTANCE AGE RATINGS SHOWN.



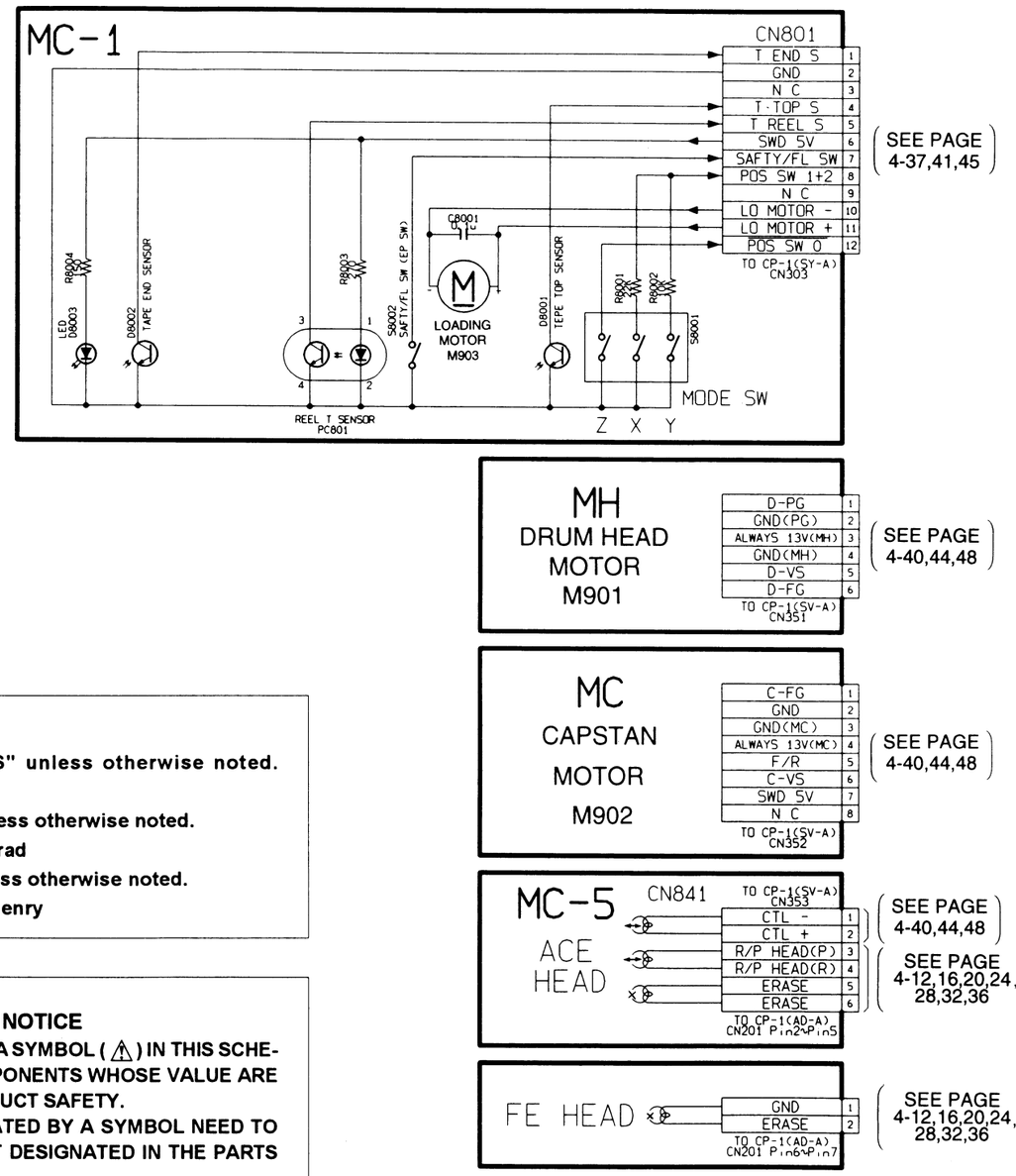

**NOTES:**

1. **All resistance values in "OHMS" unless otherwise noted. (K=1,000 ; M=1,000,000)**
2. **All capacitance values in "μF" unless otherwise noted. p=pico farad ; μ ,u or U=micro farad**
3. **All inductance values in "μH" unless otherwise noted. μ ,u or U=micro henry ; m=milli henry**

**PRODUCT SAFETY NOTICE**

**THE COMPONENTS DESIGNATED BY A SYMBOL ( ⚠ ) IN THIS SCHEMATIC DIAGRAM DESIGNATES COMPONENTS WHOSE VALUE ARE OF SPECIAL SIGNIFICANCE TO PRODUCT SAFETY.**
**SHOULD ANY COMPONENT DESIGNATED BY A SYMBOL NEED TO BE REPLACED, USE ONLY THE PART DESIGNATED IN THE PARTS LIST.**
**DO NOT DEVIATE FROM THE RESISTANCE, WATTAGE AND VOLTAGE RATINGS SHOWN.**

## 4-2. MECHANISM CONNECTION

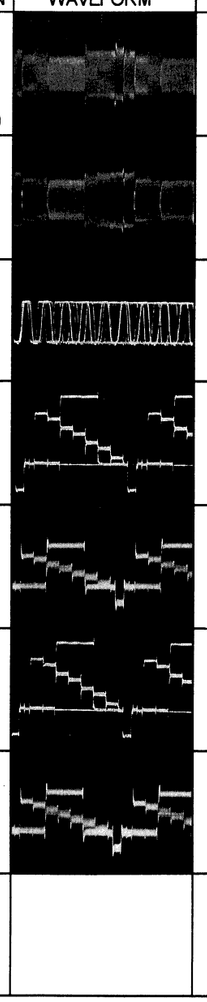


## 4-3. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

**CP-1 (VIDEO, AUDIO, SERVO/SYSTEM CONTROL, TUNER, POWER)**
– Ref. No.: CP-1 Board; 10,000 series –

There are few cases that the part isn't mounted in this model is printed on this diagram.

### VIDEO CIRCUIT WAVEFORMS

| TEST LOCATION | WAVEFORM | MODE / LEVEL | TEST LOCATION | WAVEFORM | MODE / LEVEL |
|---|---|---|---|---|---|
| IC 101 Pin 1 | | REC, EE 0.5Vp-p | IC 101 Pin 38 (PB CHROMA IN) |  | PB 0.3Vp-p |
| IC 101 Pin 7 (VIDEO IN) | | REC, EE 1.0Vp-p | IC 101 Pin 43 (PB FM IN) | | PB 0.6Vp-p |
| IC 101 Pin 11 (VIDEO OUT) | | REC, EE 2.0Vp-p | IC 101 Pin 44 TP103 (REC FM OUT) | | REC 2.0Vp-p |
| IC 101 Pin 11 (VIDEO OUT) | | PB 2.5Vp-p | IC 101 Pin 46 | | REC, EE 0.5Vp-p |
| IC 101 (UPPER) Pin 11 (LOWER) Pin 14 | | STILL (UPPER) 2.0Vp-p (LOWER) 5.0Vp-p | IC 101 Pin 46 | | PB 0.6Vp-p |
| IC 101 Pin 13 Pin 15 | | PB 0.4Vp-p | IC 101 Pin 47 | | REC, EE 0.5Vp-p |
| IC 101 Pin 17 Pin 19 Pin 21 | | PB 0.4Vp-p | IC 101 Pin 47 | | PB 0.6Vp-p |
| IC 101 Pin 38 (REC CHROMA OUT) | | REC 0.4Vp-p | | | |

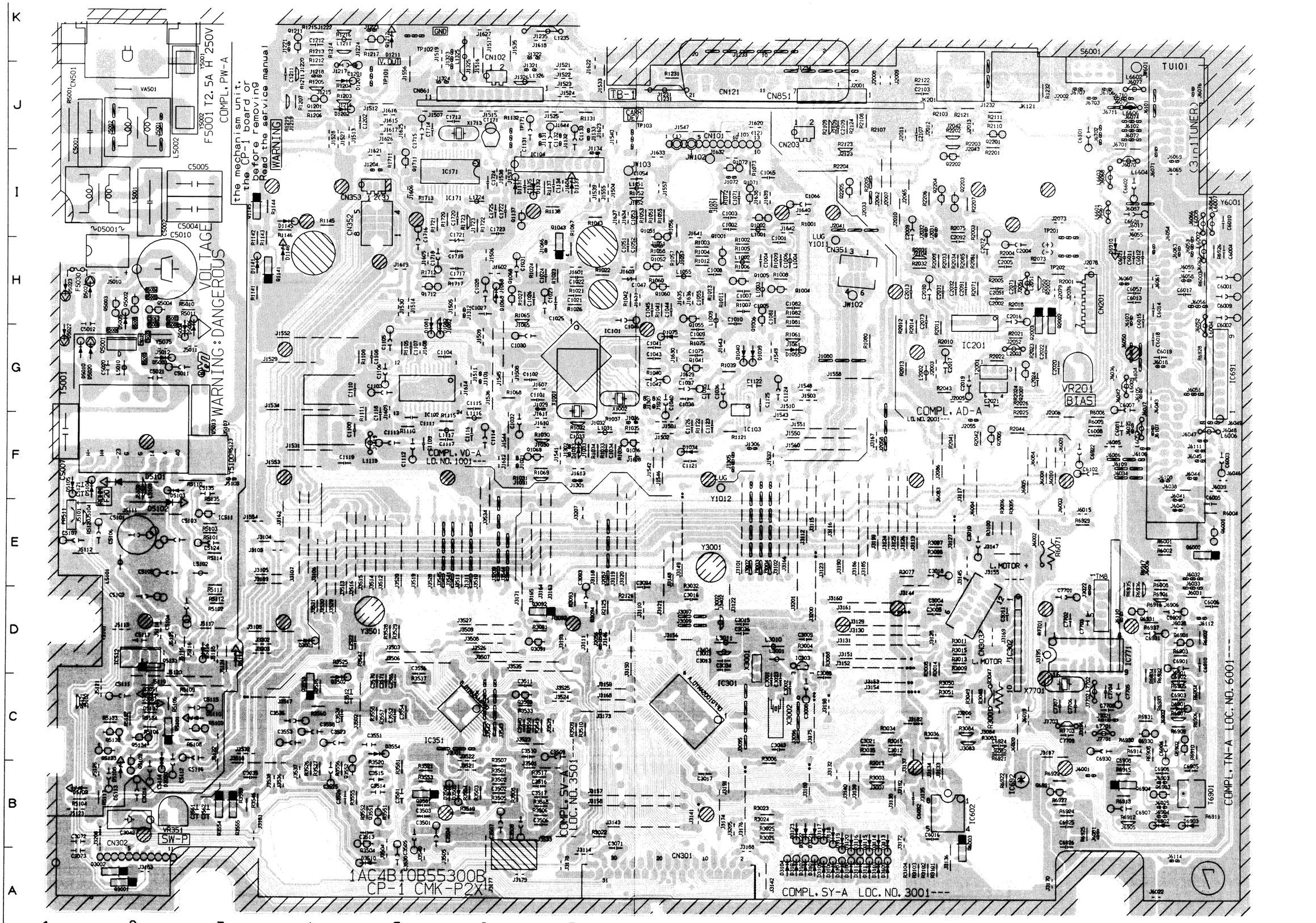
### SERVO CIRCUIT WAVEFORMS (IC351:BU2896 Series)

| TEST LOCATION | WAVEFORM & MODE/LEVEL | TEST LOCATION | WAVEFORM & MODE/LEVEL |
|---|---|---|---|
| Pin 40 (H.A.SWITCHING) | SLOW PB 5.0V 20msec 20msec | Pin 15 (CTL PULSE) | REC 5.0V 24msec 16msec |
| Pin 42 (PWM) | 5.0V 8.66KHz | Pin 15 (CTL PULSE) | PB 850μsec 5.0V 40msec |
| Pin 41, 44, 1 (PWM) | 5.0V 69.27KHz | Pin 21 (CTL HEAD–) | REC 3.6V 1.4V 24msec 16msec |
| Pin 3 (FSC INPUT) | 0.3Vp-p 4.43MHz | Pin 22 (CTL HEAD+) | REC 1.4V 3.6V 24msec 16msec |
| Pin 5 (ROTARY) | PB 5.0V 20msec 20msec | Pin 26 (CTL AMP OUT) | PB 2Vp-p 40msec |
| Pin 8 (D-PG MM) | 2msec 2.5V 7msec | Pin 28 (C-FG INPUT) | 10mVp-p 0.66msec |
| Pin 9 (RF SW PULSE) | 5.0V 20msec 20msec | Pin 29 (D-FG INPUT) | 30mVp-p 1.33msec |
| Pin 10 (AF SW PULSE) | PB 5.0V 20msec 20msec | Pin 30 (D-PG INPUT) | 250mVp-p 40msec |
| Pin 11 (COMPOSITE SYNC INPUT) | T=20msec 4.2V | Pin 38 (ENV.SW INPUT) | SLOW PB 4.0V 20msec 20msec |
| Pin 14 (C-FG PULSE) | 5.0V 1513Hz | | |

**R, POWER)**

rinted on this diagram.

| DE/LEVEL |
|---|
| 5.0V ec |
| 0V |
| 3.6V 1.4V ec |
| 1.4V 3.6V |
| 2Vp-p |
| 10mVp-p |
| 30mVp-p |
| 250mVp-p |
| 4.0V ec |

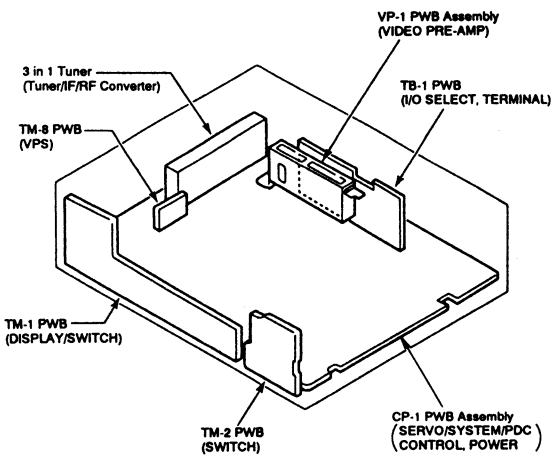


## CP-1 BOARD (VD-A, AD-A & TN-A) VIDEO, AUDIO & TUNER IF CONNECTION (SLV-

– Ref. No.: CP-1 Board; 10,000 series –

**CP-1 BOARD**

| | |
|---|---|
| CN101 | J-8 |
| CN102 | J-8 |
| CN121 | K-9 |
| CN201 | H-13 |
| CN203 | J-10 |
| CN301 | A-8 |
| CN302 | A-2 |
| CN303 | D-12 |
| CN351 | H-10 |
| CN352 | I-5 |
| CN353 | I-5 |
| CN851 | J-10 |
| CN861 | J-8 |
| D1034 | F-8 |
| D1075 | G-8 |
| D1131 | I-6 |
| D1132 | I-7 |
| D1133 | I-7 |
| D1141 | H-3 |
| D1145 | I-4 |
| D1146 | H-4 |
| D1201 | J-4 |
| D1202 | J-4 |
| D3001 | D-4 |
| D3050 | B-2 |
| D3101 | A-10 |
| D3102 | A-10 |
| D3104 | A-9 |
| D3107 | A-10 |
| D3108 | A-10 |
| D3114 | B-11 |
| D3116 | B-10 |
| D3122 | B-10 |
| D3502 | C-4 |
| D3554 | C-5 |
| D5001 | H-2 |
| D5003 | G-2 |
| D5004 | G-3 |
| D5006 | G-3 |
| D5010 | G-1 |
| D5013 | F-2 |
| D5020 | G-1 |
| D5021 | H-1 |
| D5022 | G-1 |
| D5023 | H-1 |
| D5101 | F-2 |
| D5102 | E-2 |
| D5103 | F-2 |
| D5104 | F-1 |
| D5105 | F-1 |
| D5107 | C-2 |
| D5109 | B-1 |
| D5110 | C-3 |
| D5111 | D-3 |
| D5116 | D-3 |
| D6910 | H-13 |
| IC101 | G-7 |
| IC102 | G-5 |
| IC103 | G-9 |
| IC104 | I-7 |
| IC171 | I-6 |
| IC201 | G-12 |
| IC301 | C-8 |
| IC302 | D-12 |
| IC303 | D-10 |
| IC351 | C-6 |
| IC511 | E-3 |
| IC602 | B-11 |
| IC891 | G-14 |
| IC892 | B-12 |
| IC771 | D-13 |
| Q1001 | H-8 |
| Q1004 | H-9 |
| Q1005 | H-9 |
| Q1036 | F-8 |
| Q1043 | I-7 |
| Q1052 | H-8 |
| Q1060 | H-8 |
| Q1137 | I-6 |
| Q1141 | H-3 |
| Q1145 | I-3 |
| Q1201 | J-4 |
| Q1211 | K-5 |
| Q1711 | I-5 |
| Q1712 | H-5 |
| Q2001 | G-12 |
| Q2002 | H-12 |
| Q2003 | H-12 |
| Q2201 | J-12 |
| Q2202 | I-11 |
| Q2203 | I-11 |
| Q2204 | I-11 |
| Q2205 | I-10 |
| Q3001 | A-2 |
| Q3002 | A-2 |
| Q3091 | D-7 |
| Q3092 | D-7 |
| Q3503 | C-6 |
| Q3504 | B-5 |
| Q3551 | B-5 |
| Q3552 | B-4 |
| Q3553 | C-4 |
| Q5001 | G-2 |
| Q5002 | H-2 |
| Q5003 | H-2 |
| Q5004 | H-2 |
| Q5101 | C-2 |
| Q5103 | C-3 |
| Q5131 | D-2 |
| Q5132 | C-2 |
| Q5133 | C-2 |
| Q5134 | C-2 |
| Q6921 | B-13 |




(SEE PAGE 4-37,41,45) TO SY-A: (CH+/OSD DATA) S DATA, C SYNC; (CH+ CLK/NTSC 3.58) AV CTL, AV L, PB H

(SEE PAGE 4-40,44,48) TO PWA: ALWAYS 5V, SWD 5V, SWD 12V, ALWAYS 37V, ALWAYS 12V, GND

TO SY-A ORC PWM

TO SY-A: VD MUTE, ENV DET, REC H

(SEE PAGE 4-37,41,45)

CN101: RF SW P, C.SYNC, REC H, ENV. DET, GND, R/P. C/PB. FM, SWD 5V, REC-Y, REC-BIAS, GND

TO VP-1 CN181 (SEE PAGE 4-50)

(SEE PAGE 4-37, 40,41,44,45,48) TO SV-A: RF SW P, C SYNC, V LOCK P, FSC, LP+EP H

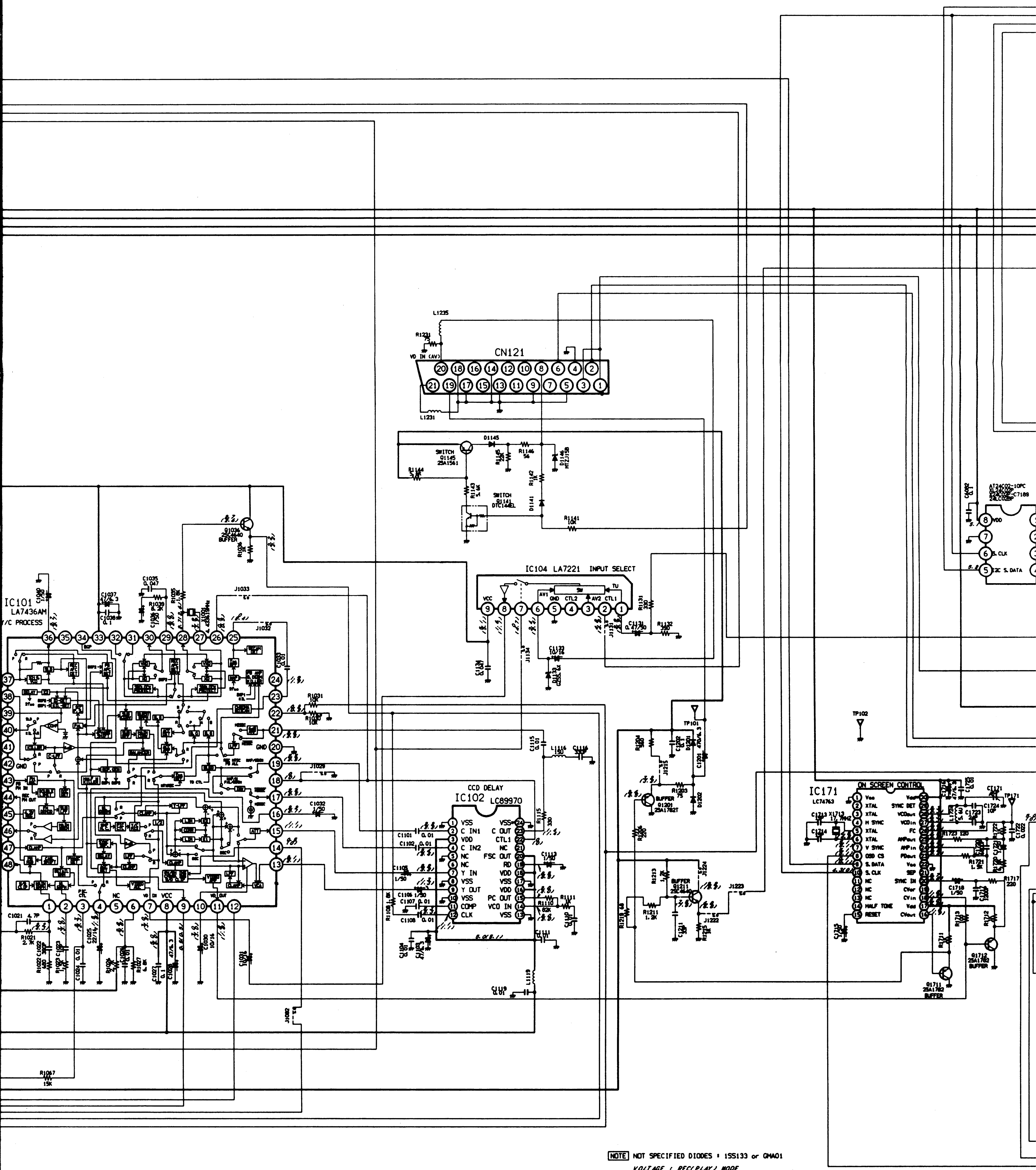
IC101 LA7436AM VIDEO Y/C PROCESS

BUFFER Q1005 2SC4640

SWITCH Q1043 2SC4038

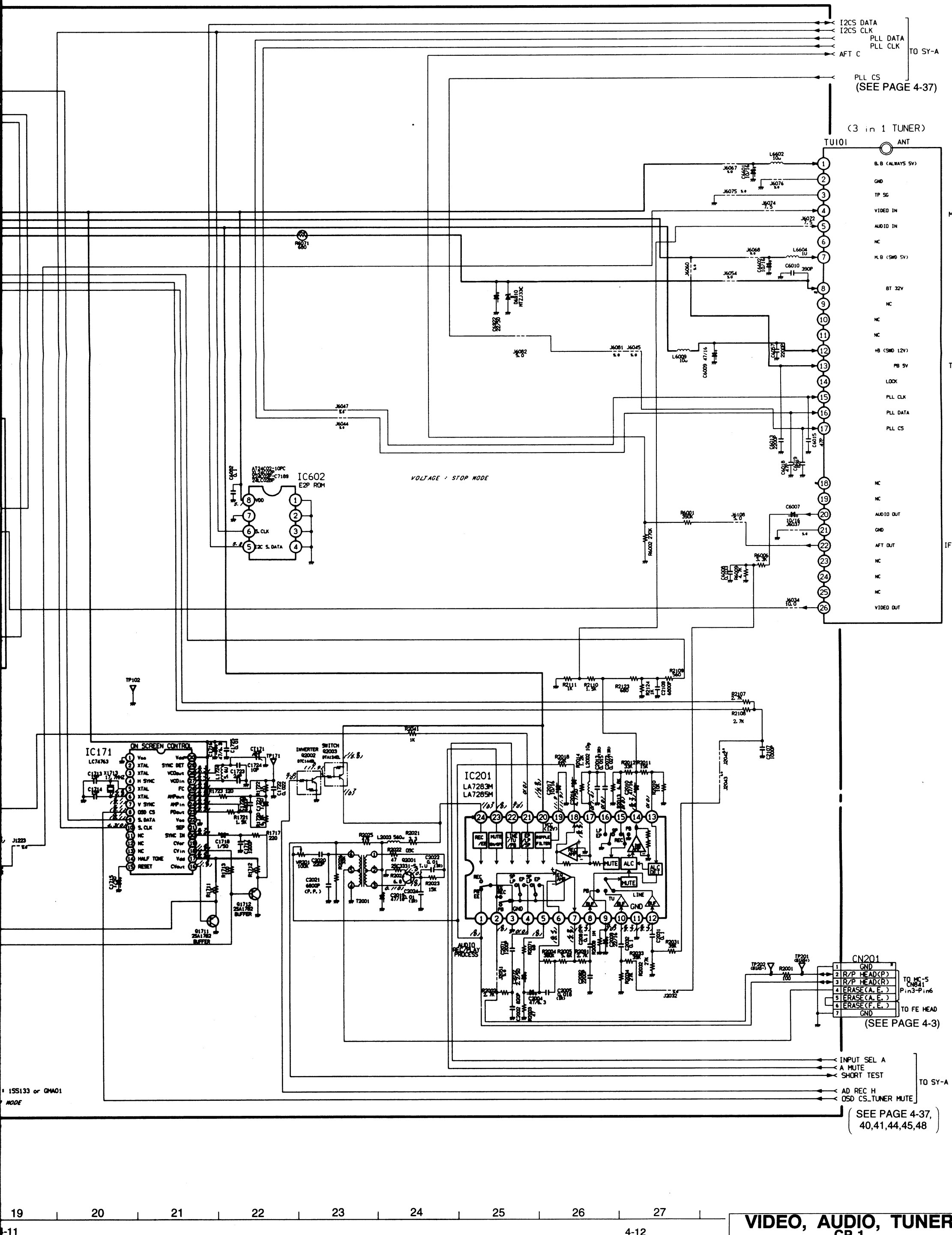
Q1060 2SC3388 SWITCH

BUFFER Q1052 2SA1762


CN121
VD IN (AV)
L1235
R1231 75
L1231
SWITCH Q1145 2SA1561
D1145
R1146 56
D1146 MTZJ15B
R1144 5.6K
R1143 5.6K
R1142 1K
SWITCH Q1141 DTC144EL
D1141
R1141 10K
IC104 LA7221 INPUT SELECT
VCC
AV1 GND CTL2 SW AV2 CTL1 TU
R1131 330
C1131 0.47/50
R1132 390
J1131
C1133 10/16
D1133
C1134 0.047
J1134
Q1036 2SC4640 BUFFER
R1036 1K
IC101 LA7436AM
Y/C PROCESS
C1037 47/6.3
C1038 0.1
C1035 0.047
R1039 8.2K
C1036 1/50
R1035 6.8K
X1001 4.433619MHz
J1033
J1032
C1033 0.01
R1031 10K
R1030 10K
J1029
C1032 1/50
GND
NC
VCC
PIC CTL
VD IN
VD OUT
C1021 4.7P
R1021 2.7K
R1022 680
C1022 390P
R1023 1.5K
C1023 10P
C1024 0.01
C1025 22/16
R1026 2K
C1026 0.01
R1027 6.8K
C1027 0.1
C1028 47/6.3
C1030 10/16
C1031 10/16
J1002
R1067 15K
CCD DELAY
IC102 LC89970
VSS
C IN1
VDD
C IN2
NC
Y IN
Y OUT
COMP
CLK
C OUT
CTL1
FSC OUT
RD
PC OUT
VCO IN
C1101 0.01
C1102 0.01
C1105 1/50
C1106 1/50
C1107 0.01
C1108 0.01
R1108 1.8K
C1104 0.01
C1103 47/6.3
C1115 0.01
L1116 150
C1116 330P
R1115 330
C1113 1/50
R1110 82K
R1111 1K
C1110 0.01
C1111 0.01
C1119 0.01
L1119
TP101
R1204 390
C1202 0.1
D1201
C1201 470/6.3
J1215
BUFFER Q1201 2SA1762T
R1203 75
D1202
R1206 220
R1213 1.2K
BUFFER Q1211 2SC4640
J1224
J1223
R1211 1.2K
R1218 68
C1211 330P
R1215 1K
J1222
TP102
IC171
LC74763
ON SCREEN CONTROL
Vss
XTAL
H SYNC
V SYNC
OSD CS
S.DATA
S.CLK
NC
HALF TONE
RESET
Vdd
SYNC DET
VCOout
VCOin
FC
AMPout
AMPin
PDout
SEP
SYNC IN
CVer
CVin
CVout
C1713 15P
X1713 17.7MHZ
C1714
C1715
C1716 47/6.3
C1725 0.01
C1171
TP171
L1722
C1723 24P
C1724 10P
C1722 0.022
R1723 120
R1722
R1721 1.5K
R1720
C1720
C1721
R1717 220
C1718 1/50
C1717
R1713
R1711
R1712
Q1711 2SA1762 BUFFER
Q1712 2SA1762 BUFFER
AT24C02-10PC
C4002 0.1
VDD
S.CLK
I2C S.DATA

NOTE NOT SPECIFIED DIODES : 1SS133 or GMA01
*VOLTAGE : REC(PLAY) MODE*

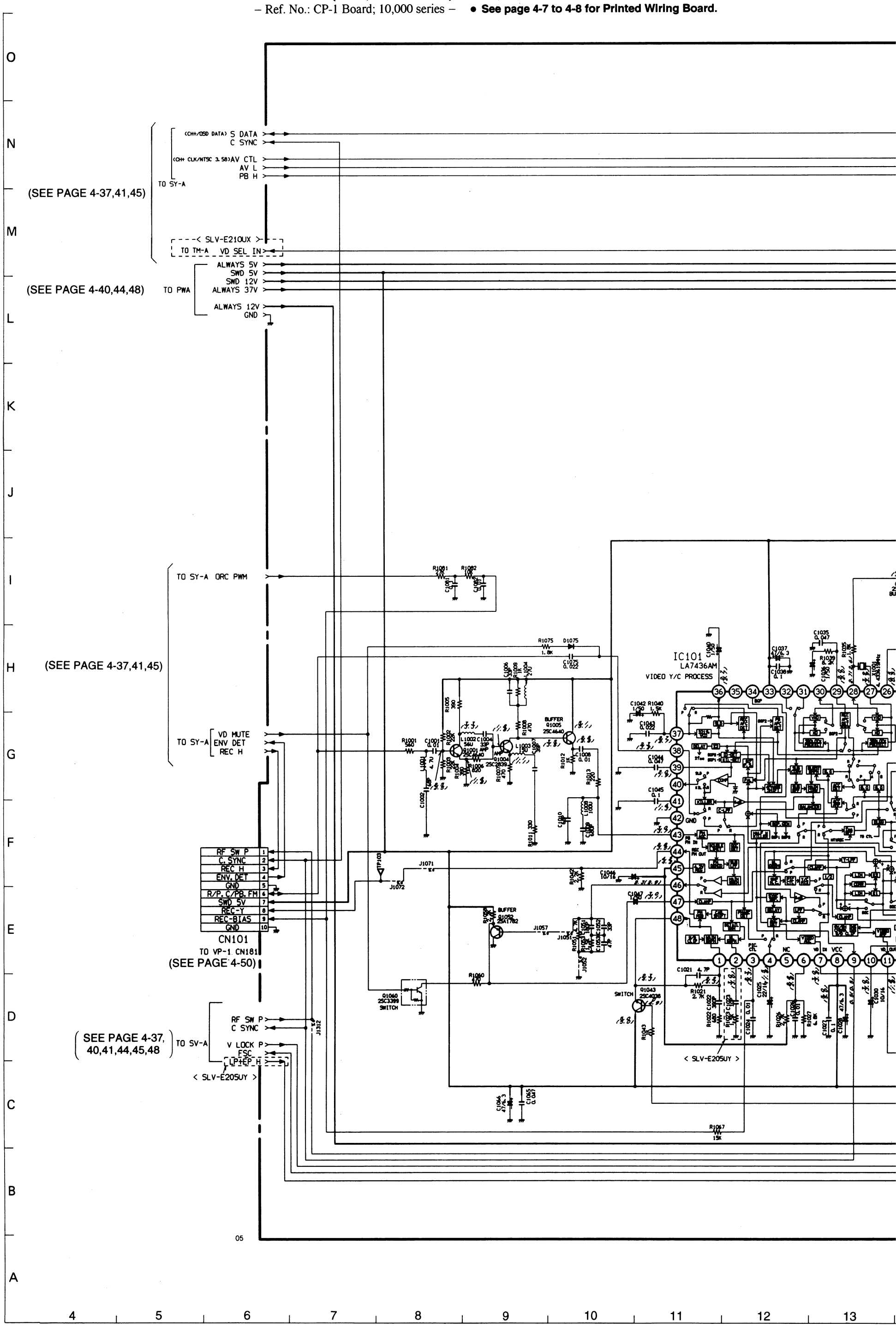
11 12 13 14 15 16 17 18 19 20 21 22

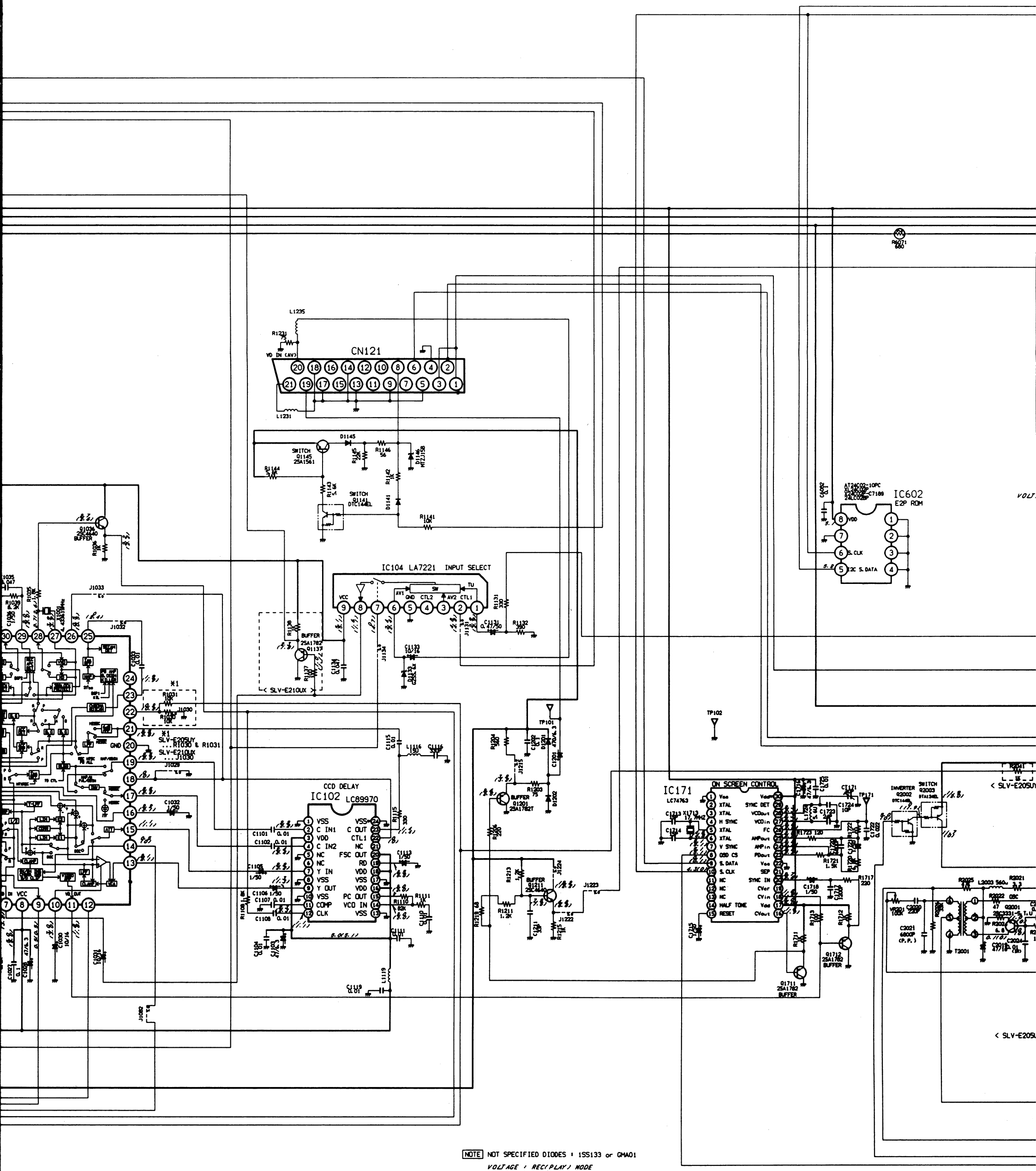

I2CS DATA
I2CS CLK
PLL DATA
PLL CLK
AFT C
PLL CS
TO SY-A
(SEE PAGE 4-37)
(3 in 1 TUNER)
TU101
ANT
B.B (ALWAYS 5V)
GND
TP SG
VIDEO IN
AUDIO IN
NC
M.B (SW0 5V)
BT 32V
NC
NC
NC
+B (SW0 12V)
PB 5V
LOCK
PLL CLK
PLL DATA
PLL CS
NC
NC
AUDIO OUT
GND
AFT OUT
NC
NC
NC
VIDEO OUT
MOD
TU
IF
IC602
E2P ROM
AT24C02-10PC
M24C02-C7188
24LC02B
VOLTAGE : STOP MODE
IC171
LC74763
ON SCREEN CONTROL
IC201
LA7283M
LA7285M
AUDIO REC/PLAY PROCESS
CN201
GND
R/P HEAD(P)
R/P HEAD(R)
ERASE(A. E. )
ERASE(A. E. )
ERASE(F. E. )
GND
TO MC-5 CN841 Pin3-Pin6
TO FE HEAD
(SEE PAGE 4-3)
INPUT SEL A
A MUTE
SHORT TEST
AD REC H
OSD CS_TUNER MUTE
TO SY-A
(SEE PAGE 4-37, 40,41,44,45,48)
1SS133 or GMA01
MODE

## CP-1 BOARD (VD-A, AD-A & TN-A) VIDEO, AUDIO & TUNER IF CONNECTION (SLV-E205UY & SLV-E210UX)

– Ref. No.: CP-1 Board; 10,000 series –

• See page 4-7 to 4-8 for Printed Wiring Board.

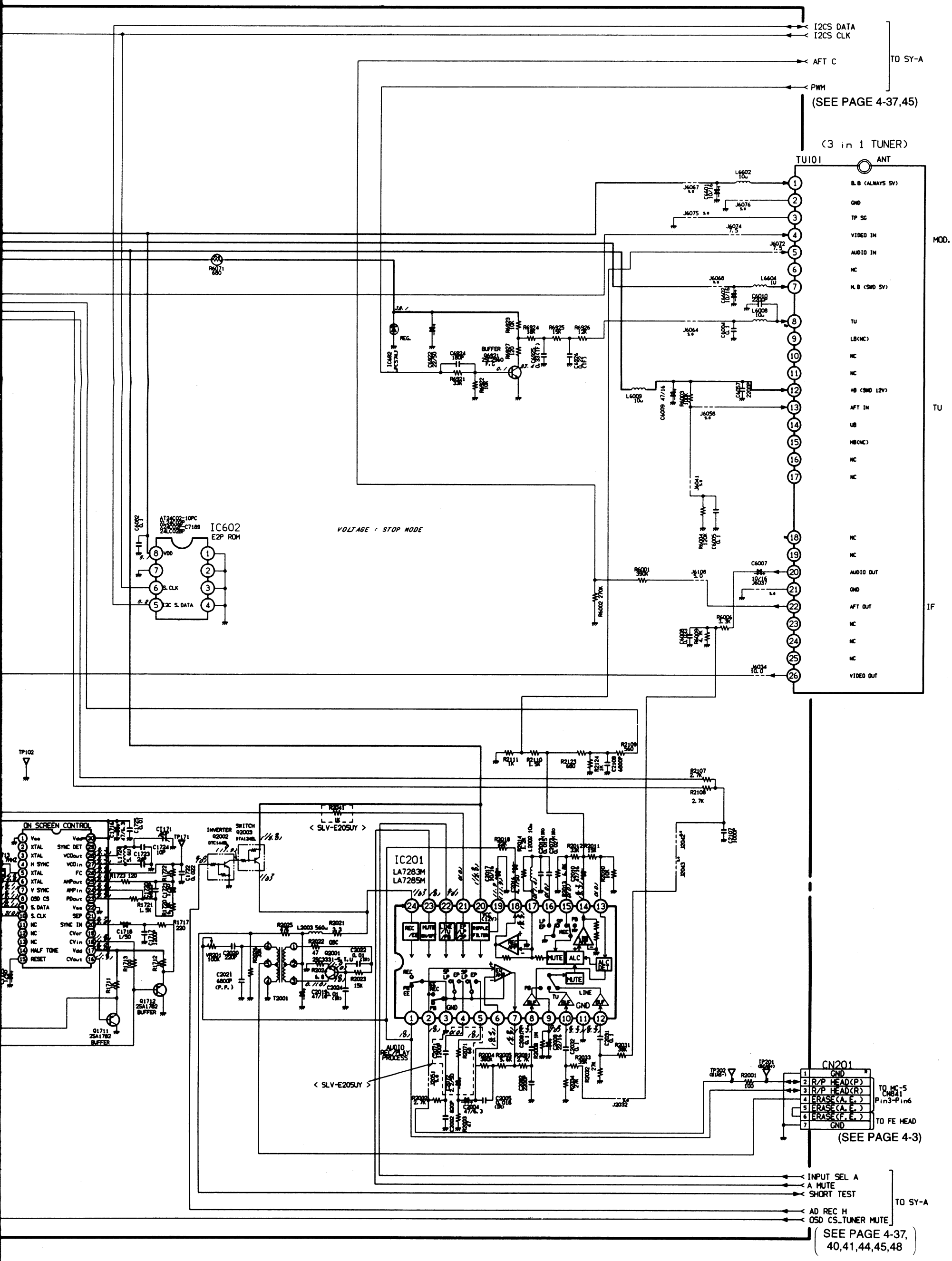





NOTE NOT SPECIFIED DIODES : 1SS133 or GMA01

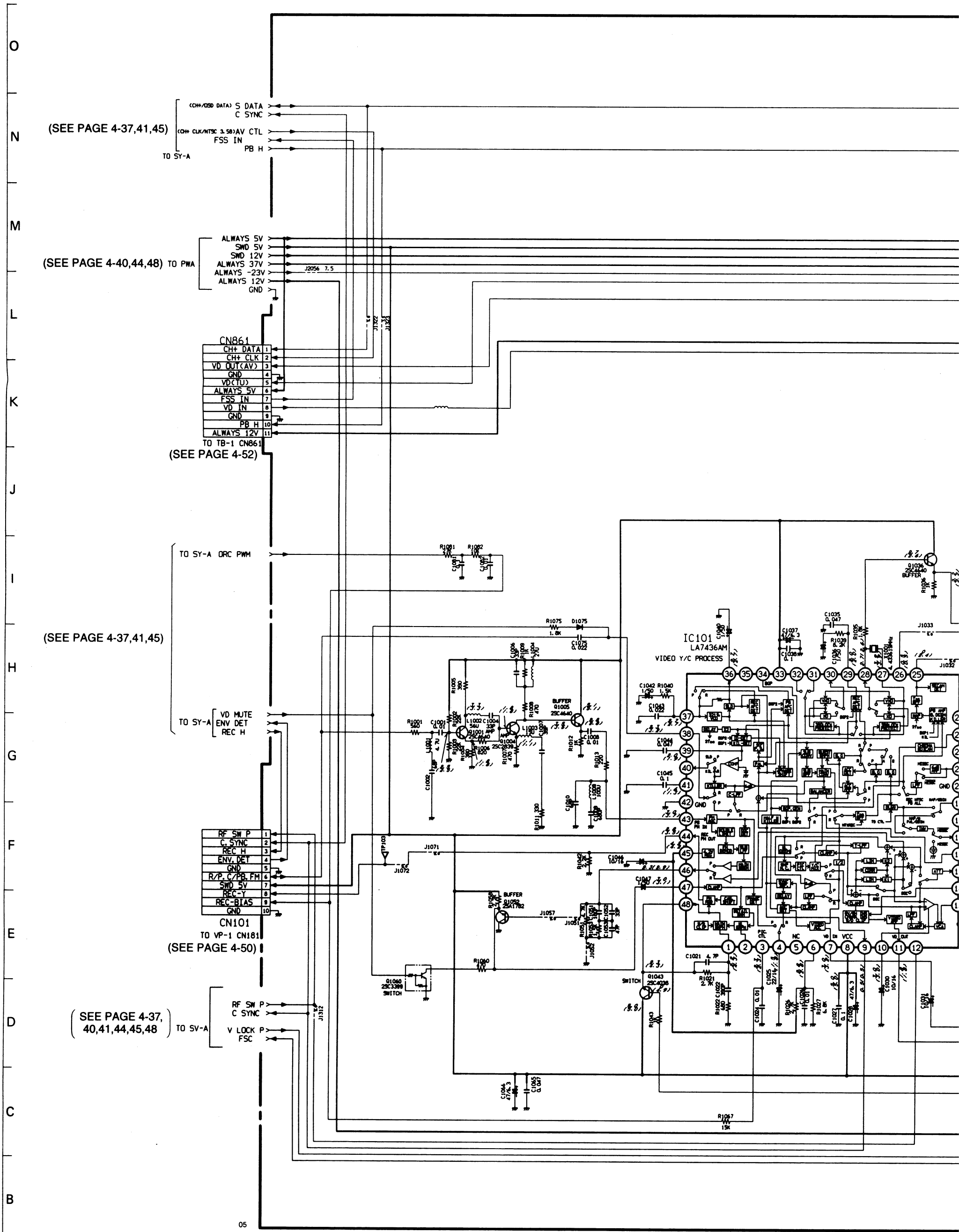
*VOLTAGE : REC(PLAY) MODE*

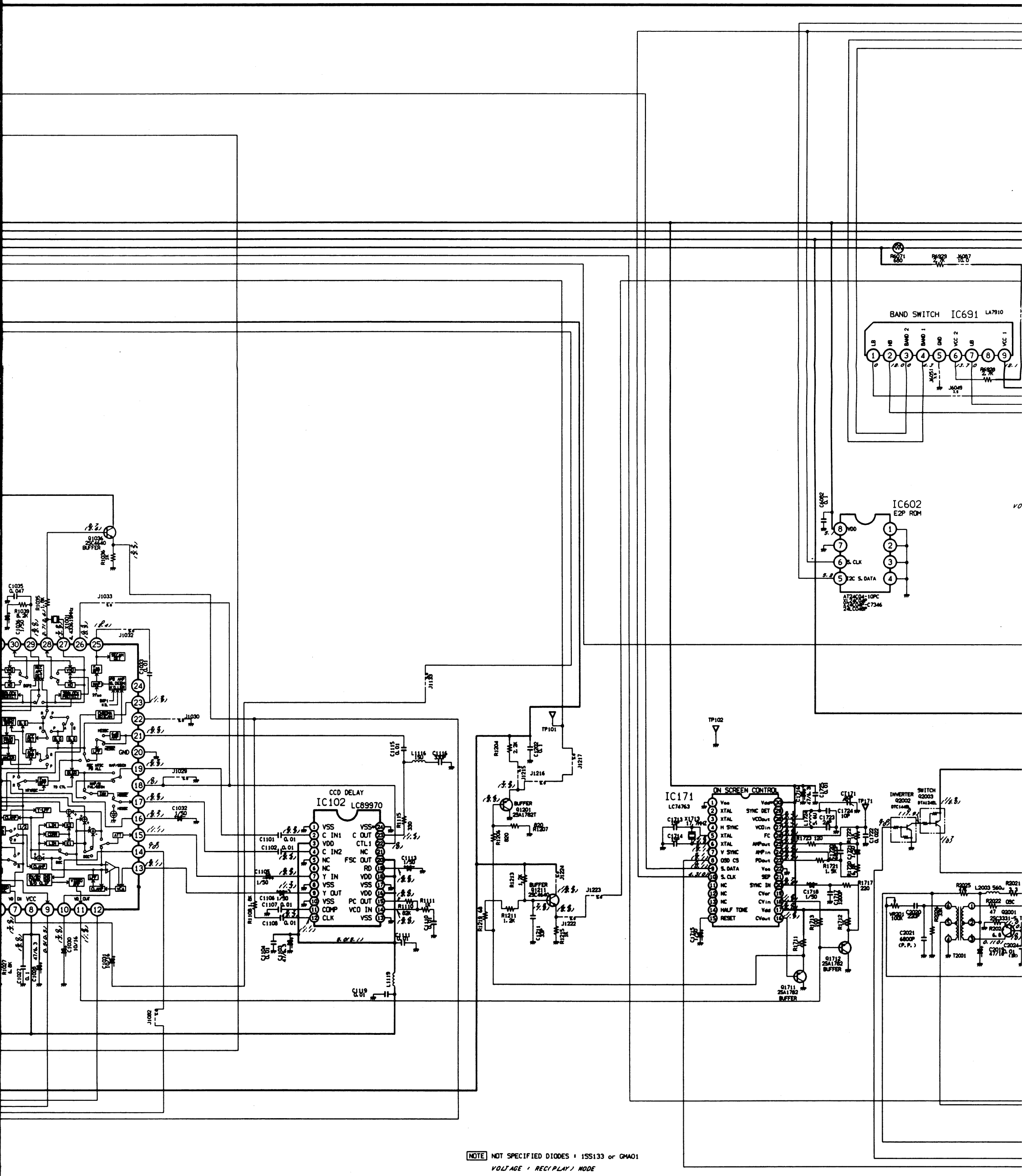
13 14 15 16 17 18 19 20 21 22 23 24

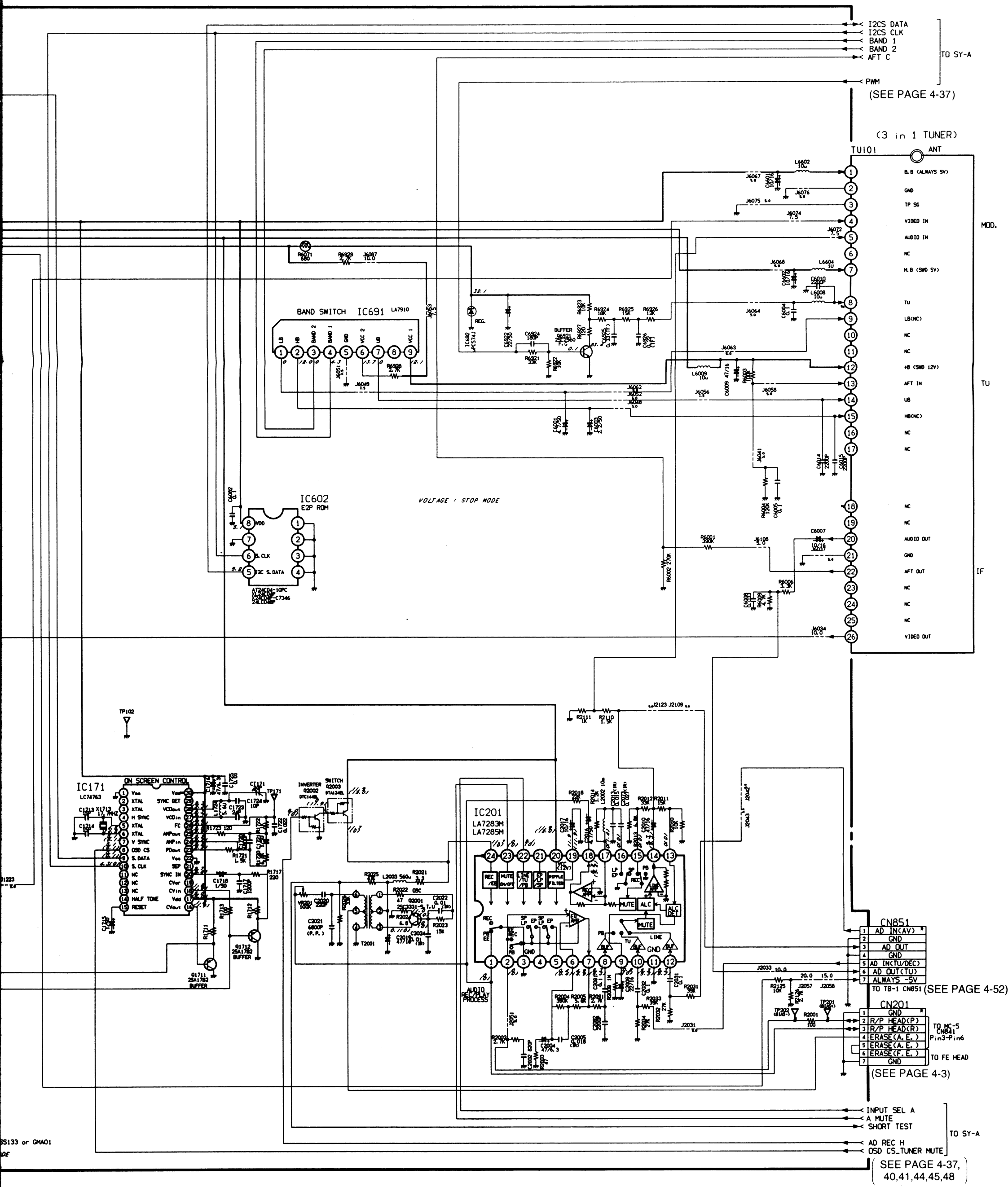

I2CS DATA
I2CS CLK
AFT C
PWM
TO SY-A
(SEE PAGE 4-37,45)
(3 in 1 TUNER)
TU101
ANT
B.B (ALWAYS 5V)
GND
TP SG
VIDEO IN
AUDIO IN
NC
M.B (SW0 5V)
TU
LB(NC)
NC
NC
+B (SW0 12V)
AFT IN
UB
HB(NC)
NC
NC
NC
NC
AUDIO OUT
GND
AFT OUT
NC
NC
NC
VIDEO OUT
MOD.
TU
IF
IC602
E2P ROM
VOLTAGE : STOP MODE
IC201
LA7283M
LA7285M
< SLV-E205UY >
CN201
TO MC-5
CN841
Pin3-Pin6
TO FE HEAD
(SEE PAGE 4-3)
INPUT SEL A
A MUTE
SHORT TEST
AD REC H
OSD CS_TUNER MUTE
TO SY-A
SEE PAGE 4-37,
40,41,44,45,48

## CP-1 BOARD (VD-A, AD-A & TN-A) VIDEO, AUDIO & TUNER IF CONNECTION (SLV-E210CP)

– Ref. No.: CP-1 Board; 10,000 series – • **See page 4-7 to 4-8 for Printed Wiring Board.**



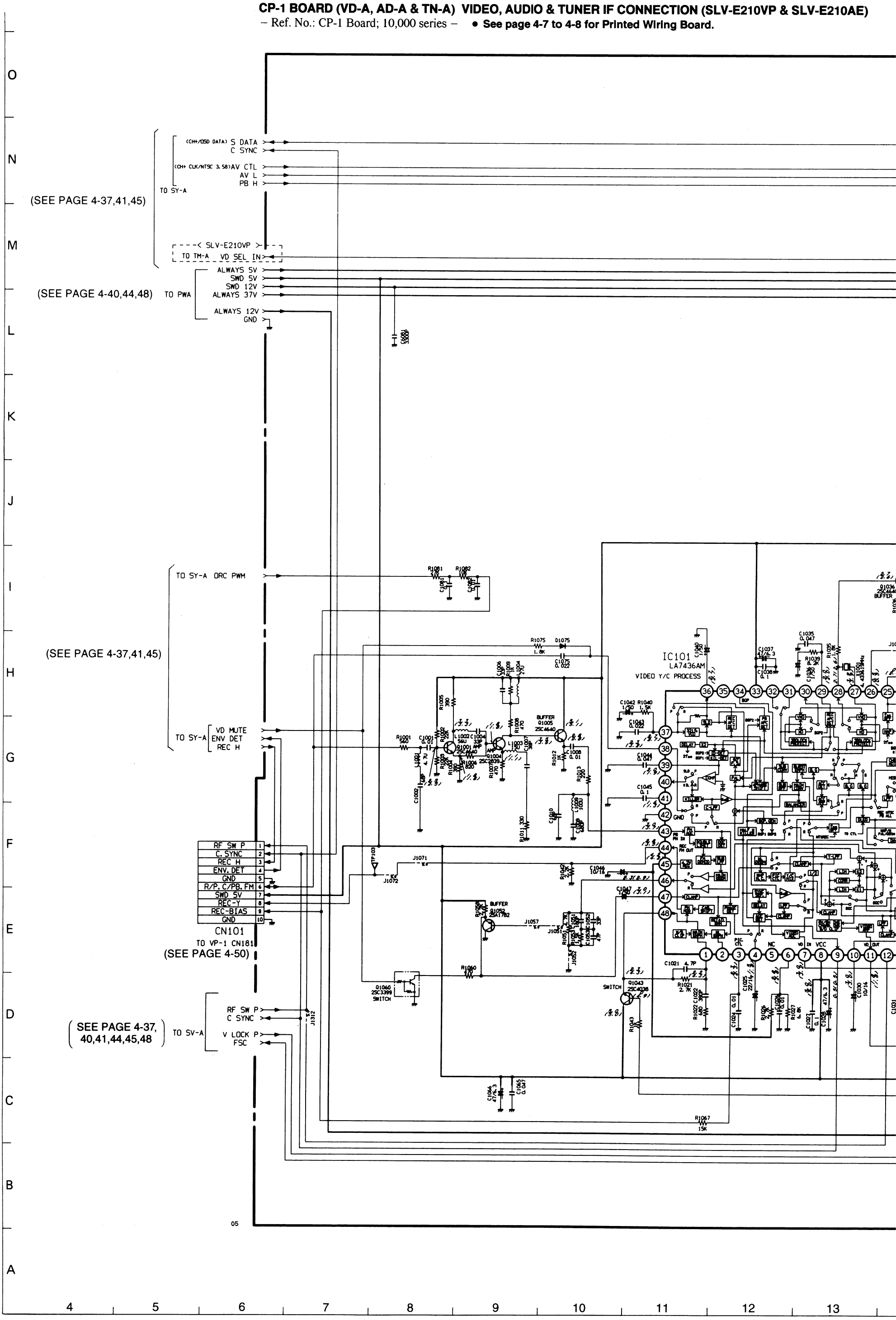

BAND SWITCH IC691 LA7910
LB
HB
BAND 2
BAND 1
GND
VCC 2
LB
VCC 1
IC602
E2P ROM
VDD
S. CLK
I2C S. DATA
AT24C04-10PC
CCD DELAY
IC102 LC89970
VSS
C IN1
VDD
C IN2
NC
NC
Y IN
VSS
Y OUT
VSS
COMP
CLK
C OUT
CTL1
NC
FSC OUT
RD
VDD
VSS
VDD
PC OUT
VCO IN
VSS
IC171
LC74763
ON SCREEN CONTROL
Vcc
XTAL
XTAL
H SYNC
XTAL
XTAL
V SYNC
OSD CS
S. DATA
S. CLK
NC
NC
NC
HALF TONE
RESET
SYNC DET
VCOout
VCOin
FC
APCout
APCin
PDout
Vss
SEP
SYNC IN
CVer
CVin
Vdd
CVout
INVERTER Q2002
SWITCH Q2003
BUFFER Q1036
BUFFER Q1201
BUFFER Q1211
Q1712 2SA1762 BUFFER
Q1711 2SA1762 BUFFER
TP101
TP102
TP171
J1033
J1032
J1030
J1029
J1028
J1216
J1217
J1223
J1222
J1224
J1225
J1215
J1220
J1221
J1227
J1228
J1229
J1230
J1231
J1232
J1233
J1234
J1235
J1236
J1237
J1238
J1239
J1240
J1241
J1242
J1243
J1244
J1245
J1246
J1247
J1248
J1249
J1250
J1251
J1252
J1253
J1254
J1255
J1256
J1257
J1258
J1259
J1260
J1261
J1262
J1263
J1264
J1265
J1266

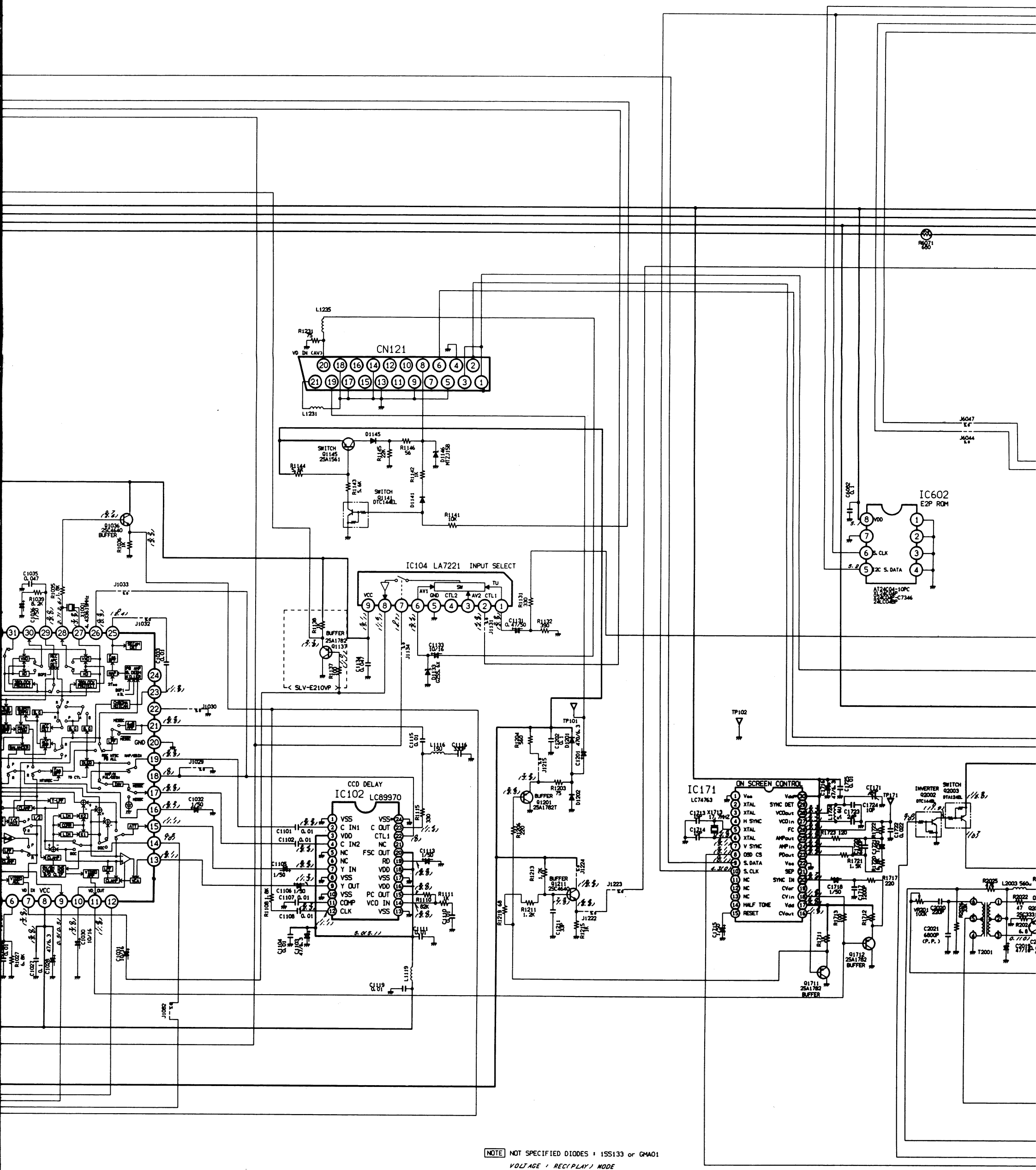

I2CS DATA
I2CS CLK
BAND 1
BAND 2
AFT C
PWM
TO SY-A
(SEE PAGE 4-37)
(3 in 1 TUNER)
TU101
ANT
B. B (ALWAYS 5V)
GND
TP SG
VIDEO IN
AUDIO IN
NC
M. B (SWD 5V)
TU
LB(NC)
NC
NC
+B (SWD 12V)
AFT IN
UB
HB(NC)
NC
NC
NC
NC
AUDIO OUT
GND
AFT OUT
NC
NC
NC
VIDEO OUT
MOD.
TU
IF
BAND SWITCH IC691 LA7910
IC602
E2P ROM
VOLTAGE : STOP MODE
IC171
LC74763
ON SCREEN CONTROL
IC201
LA7283M
LA7285M
AUDIO REC/PLAY PROCESS
CN851
AD IN(AV)
GND
AD OUT
GND
AD IN(TU/DEC)
AD OUT(TU)
ALWAYS -5V
TO TB-1 CN851 (SEE PAGE 4-52)
CN201
GND
R/P HEAD(P)
R/P HEAD(R)
ERASE(A. E. )
ERASE(A. E. )
ERASE(F. E. )
GND
TO MC-5 CN841 Pin3-Pin6
TO FE HEAD
(SEE PAGE 4-3)
INPUT SEL A
A MUTE
SHORT TEST
AD REC H
OSD CS_TUNER MUTE
TO SY-A
(SEE PAGE 4-37, 40,41,44,45,48)

## CP-1 BOARD (VD-A, AD-A & TN-A) VIDEO, AUDIO & TUNER IF CONNECTION (SLV-E210VP & SLV-E210AE)

– Ref. No.: CP-1 Board; 10,000 series –

• See page 4-7 to 4-8 for Printed Wiring Board.




CN121
L1235
L1231
R1231
VD IN (AV)
D1145
SWITCH Q1145 2SA1561
SWITCH Q1141 DTC144EL
D1146 MTZJ15B
R1144 5.6K
R1145 22K
R1146 56
R1142 1K
R1143 5.6K
D1141
R1141 10K
Q1036 2SC4640 BUFFER
R1036 1K
C1035 0.047
R1039 2K
R1005 1K
X1001 4.433619MHz
J1033
J1032
J1030
J1029
J1031
J1028
J1027
J1026
J1025
J1024
J1023
J1022
J1021
J1020
J1019
J1018
J1017
J1016
J1015
J1014
J1013
J1012
J1011
J1010
J1009
J1008
J1007
J1006
J1005
J1004
J1003
J1002
J1001
J2001
IC104 LA7221 INPUT SELECT
VCC
GND
SW
TU
AV1
CTL2
AV2
CTL1
R1131 330
C1131 0.47/50
R1132 330
C1133 10/16
C1134 0.47/50
R1130
R1137 470
Q1137 BUFFER 2SA1762
< SLV-E210VP >
CCD DELAY
IC102 LC89970
VSS
C IN1
VDD
C IN2
NC
NC
Y IN
VSS
Y OUT
VSS
COMP
CLK
C OUT
CTL1
NC
FSC OUT
RD
VDD
VSS
VDD
PC OUT
VCO IN
VSS
R1115 330
C1101 0.01
C1102 0.01
C1103 1/50
C1104 1/50
C1105 1/50
C1106 1/50
C1107 0.01
C1108 0.01
R1108 15K
R1109 15K
R1110 62K
R1111 1K
C1110 0.01
C1111 0.01
C1112 47/16
C1113 1/50
C1114 0.01
C1115 0.01
L1116 10U
C1116
L1119
C1119 0.01
C1100 0.1
R1027 5.6K
C1027 0.1
C1028 47/6.3
C1029 10/16
C1030 10/16
C1031 0.1
C1032 1/50
VD IN
VD OUT
VCC
TP101
TP102
R1204 220
C1202 0.01
D1201 470/6.3
C1201 470/6.3
R1203 75
Q1201 BUFFER 2SA1762T
D1202
R1206 220
J1215
J1224
J1223
J1222
R1213 1.2K
Q1211 BUFFER 2SC4640
R1211 1.2K
R1218 68
C1221 0.01
R1215 1K
C1225 0.01
IC602
E2P ROM
C6002 0.1
VDD
SCL CLK
SDA I2C S. DATA
AT24C04-10PC
24LC04BSM
24LC04BSP-C7346
J6047
J6044
IC171
ON SCREEN CONTROL
LC74763
Vss
XTAL
XTAL
H SYNC
XTAL
XTAL
V SYNC
OSD CS
S. DATA
S. CLK
NC
NC
NC
HALF TONE
RESET
SYNC DET
VCOout
VCOin
FC
AMPout
AMPin
PDout
Vss
SEP
SYNC IN
CVer
CVin
Vdd
CVout
C1713 X1713 17.7MHZ
C1714
C1715 0.01
C1716 1/50
C1717 0.01
C1718 1/50
C1719 0.01
C1720 0.01
C1721 0.01
C1722 0.01
C1723 22P
C1724 10P
C1725 0.01
C1726 0.01
C1727 0.01
C1728 0.01
C1729 0.01
C1730 0.01
C1731 0.01
C1732 0.01
C1733 0.01
C1734 0.01
C1735 0.01
TP171
R1721 1.5K
R1722 120
R1723 120
R1717 220
R1711
R1712
R1713
Q1711 BUFFER 2SA1762
Q1712 BUFFER 2SA1762
INVERTER Q2002 DTA124EL
SWITCH Q2003 DTA124EL
R2025 2K
L2003 560u
R2022 47
R202 6.8
C2020 220P
C2021 6800P (P.P.)
VR201 10K
T2001
NOTE NOT SPECIFIED DIODES : 1SS133 or GMA01
VOLTAGE : REC(PLAY) MODE

I2CS DATA
I2CS CLK
PLL DATA
PLL CLK
AFT C
TO SY-A
PLL CS
(SEE PAGE 4-37,45)

TU101 ANT
1 B.B (ALWAYS 5V)
2 GND
3 TP SG
4 M.B (SWD 5V)
5 NC
6 VIDEO IN
7 AUDIO IN
MOD.

8 PB 5V
9 BT 32V
10 CLOCK
11 DATA
12 ENABLE
13 GND
14 NC
15 +B (SWD 12V)
16 AUDIO OUT
17 GND
18 AFT OUT
19 NC
20 VIDEO OUT
TU
IF

IC602
E2P ROM
AT24C04-10PC
M24C04B
M24C04B-C7346
24LC04B/P
VOLTAGE : STOP MODE

IC171
LC74763
ON SCREEN CONTROL
Vss, XTAL, XTAL, H SYNC, XTAL, V SYNC, OSD CS, S.DATA, S.CLK, NC, NC, NC, HALF TONE, RESET
SYNC DET, VCOout, VCOin, FC, AMPout, AMPin, PDout, Vss, SEP, SYNC IN, CVcr, CVin, Vdd, CVout
Q1711 2SA1762 BUFFER
Q1712 2SA1762 BUFFER

IC201
LA7283M
LA7285M
REC/PB, MUTE, LINE/TU/PB, EP/SP, RIPPLE FILTER, ALC, REC/PB, LINE, GND
AUDIO REC/PLAY PROCESS

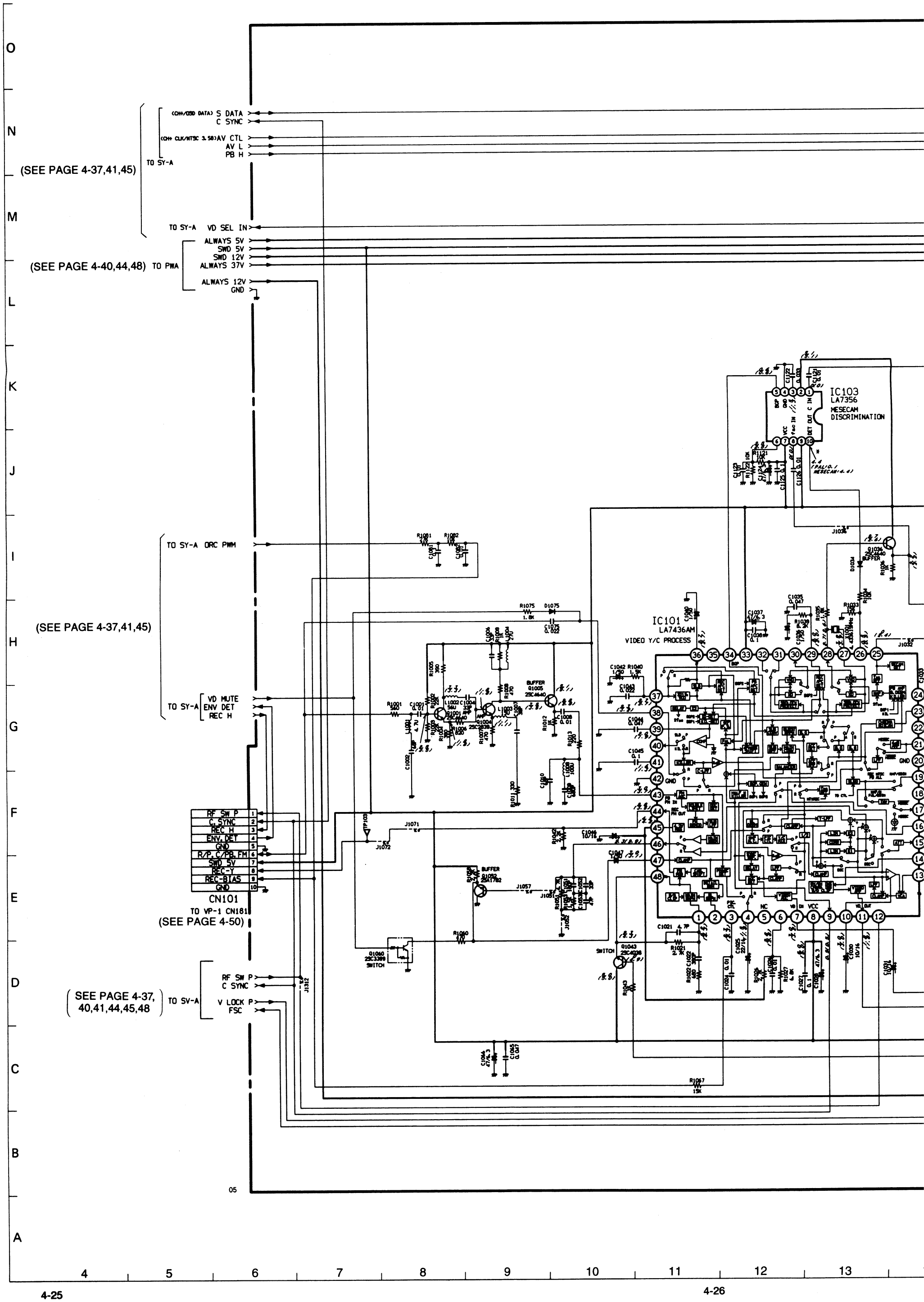
CN201
1 GND
2 R/P HEAD(P)
3 R/P HEAD(R)
4 ERASE(A.E.)
5 ERASE(A.E.)
6 ERASE(F.E.)
7 GND
TO MC-5 CN841 Pin3-Pin6
TO FE HEAD
(SEE PAGE 4-3)

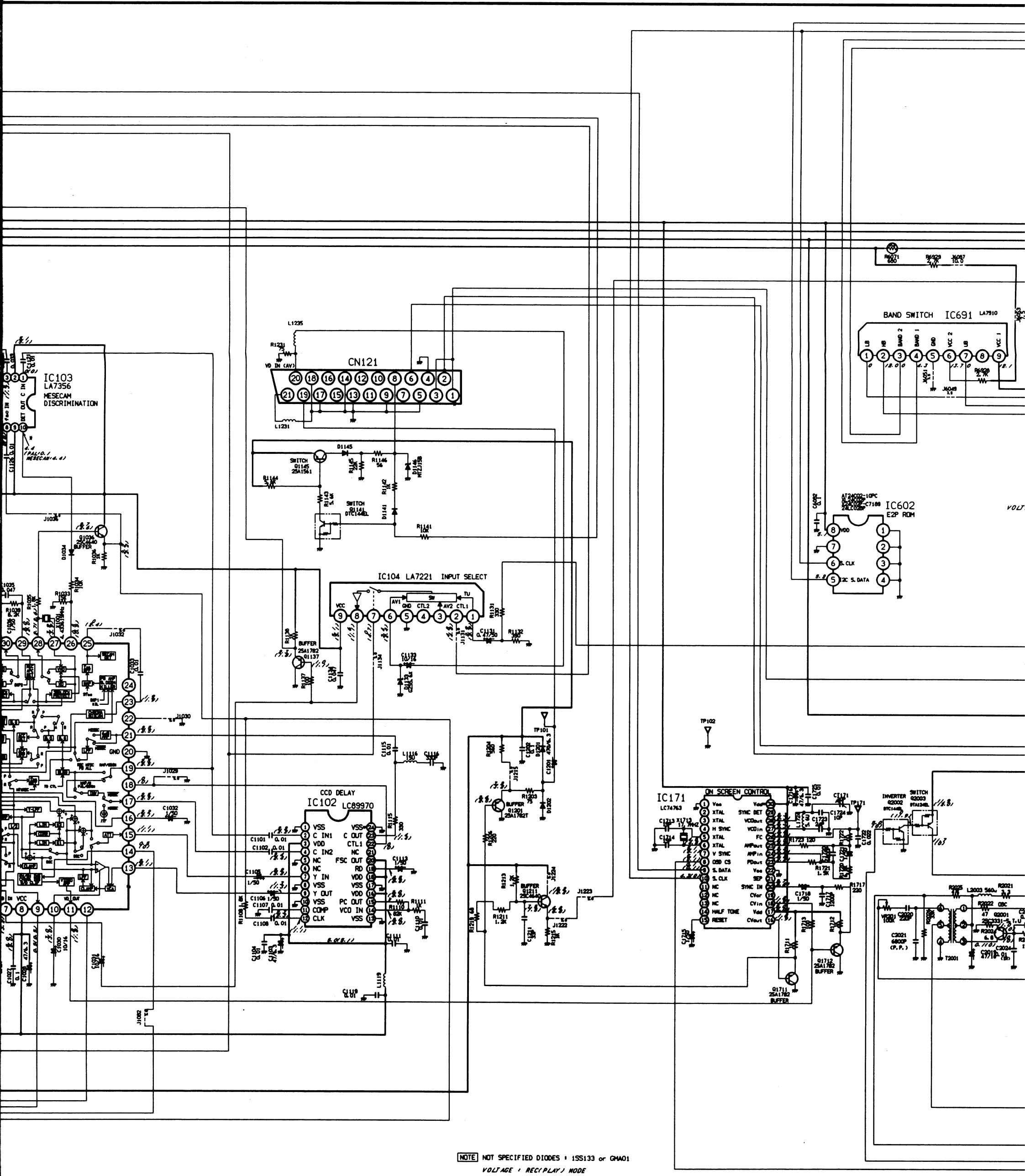
INPUT SEL A
A MUTE
SHORT TEST
AD REC H
OSD CS_TUNER MUTE
TO SY-A
(SEE PAGE 4-37, 40,41,44,45,48)

20 21 22 23 24 25 26 27 28 29 30 31

## CP-1 BOARD (VD-A, AD-A & TN-A) VIDEO, AUDIO & TUNER IF CONNECTION (SLV-E210EE)

– Ref. No.: CP-1 Board; 10,000 series – • **See page 4-7 to 4-8 for Printed Wiring Board.**




IC103
LA7356
MESECAM
DISCRIMINATION
CN121
VD IN (AV)
IC104 LA7221 INPUT SELECT
BUFFER
SWITCH
IC102 LC89970
CCD DELAY
BAND SWITCH IC691 LA7910
IC602
E2P ROM
IC171
ON SCREEN CONTROL
LC74763
INVERTER SWITCH
BUFFER
GND
TP101
TP102
NOTE NOT SPECIFIED DIODES : 1SS133 or GMA01
VOLTAGE : REC(PLAY) MODE

I2CS DATA
I2CS CLK
BAND 1
BAND 2
AFT C
PWM
TO SY-A
(SEE PAGE 4-41)

(3 in 1 TUNER)
TU101
ANT
B.B (ALWAYS 5V)
TANK SW (BG=GND I.OK=OPEN)
TP SG
VIDEO IN
AUDIO IN
NC
M.B (SWD 5V)
TU
LB(NC)
NC
NC
+B (SWD 12V)
AFT IN
UB
HB(NC)
NC
NC
NC
NC
AUDIO OUT
GND
AFT OUT
NC
NC
NC
VIDEO OUT
MOD.
TU
IF

S6001

BAND SWITCH IC691 LA7910

IC602 E2P ROM
AT24C02-10PC
VDD
S. CLK
I2C S. DATA

VOLTAGE : STOP MODE

IC171
ON SCREEN CONTROL
LC74763
Vss
XTAL
XTAL
H SYNC
XTAL
XTAL
V SYNC
OSD CS
S. DATA
S. CLK
NC
NC
NC
HALF TONE
RESET
Vdd
SYNC DET
VCOout
VCOin
FC
AMPout
AMPin
PDout
Vss
SEP
SYNC IN
CVor
CVin
Vdd
CVout

Q1711 2SA1762 BUFFER
Q1712 2SA1762 BUFFER

INVERTER Q2003 DTC144EE
SWITCH Q2003 DTA124EE

IC201
LA7283M
LA7285M
REC/PB
MUTE
RIPPLE FILTER
MUTE
ALC
ALC DET
LINE
TU
GND
AUDIO REC/PLAY PROCESS

CN201
GND
R/P HEAD(P)
R/P HEAD(R)
ERASE(A.E.)
ERASE(A.E.)
ERASE(F.E.)
GND
TO MC-5 CN841 Pin3-Pin6
TO FE HEAD
(SEE PAGE 4-3)

INPUT SEL A
A MUTE
SHORT TEST
AD REC H
OSD CS_TUNER MUTE
TO SY-A
(SEE PAGE 4-37, 40,41,44,45,48)

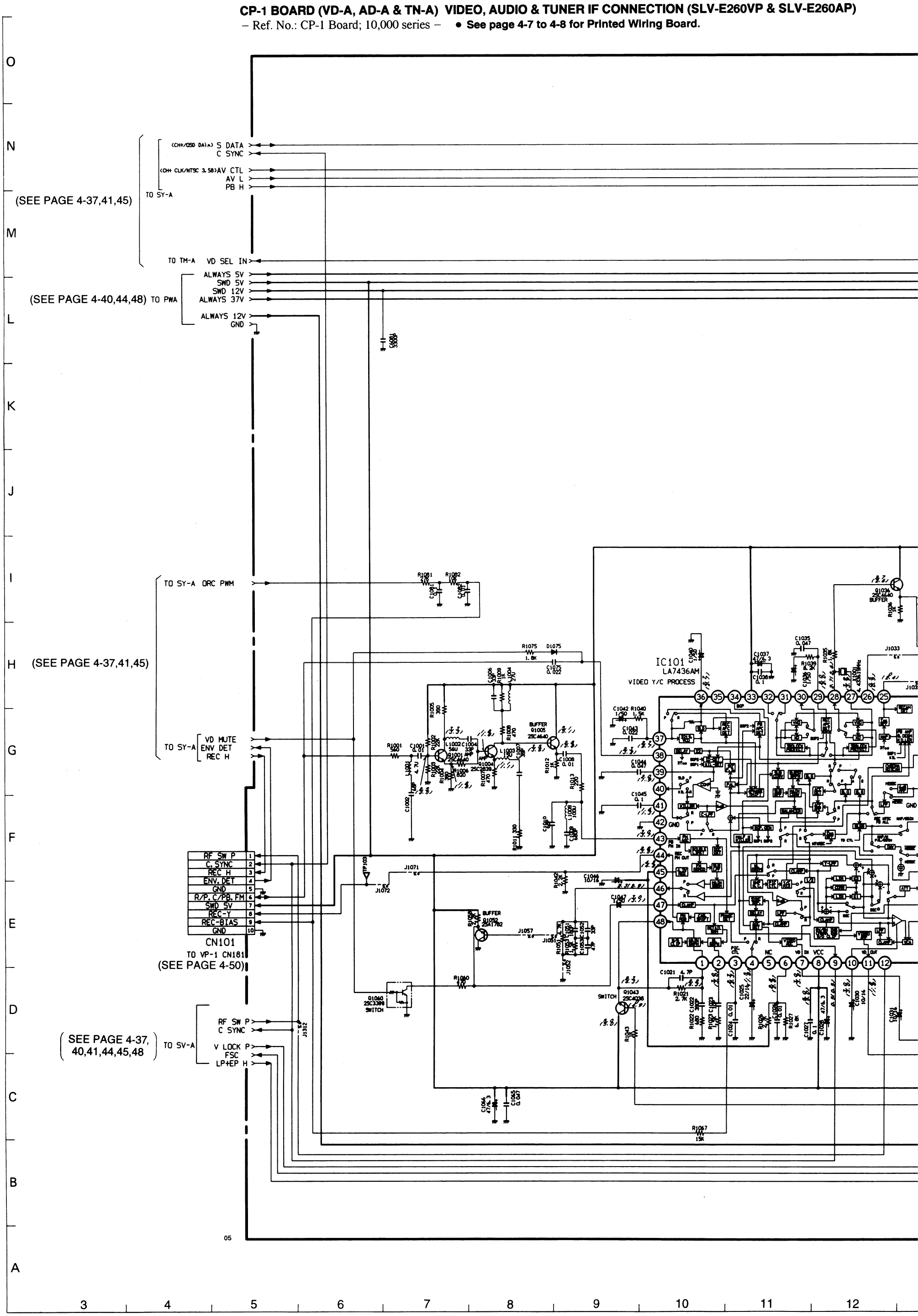
33 or GMA01

20 21 22 23 24 25 26 27 28

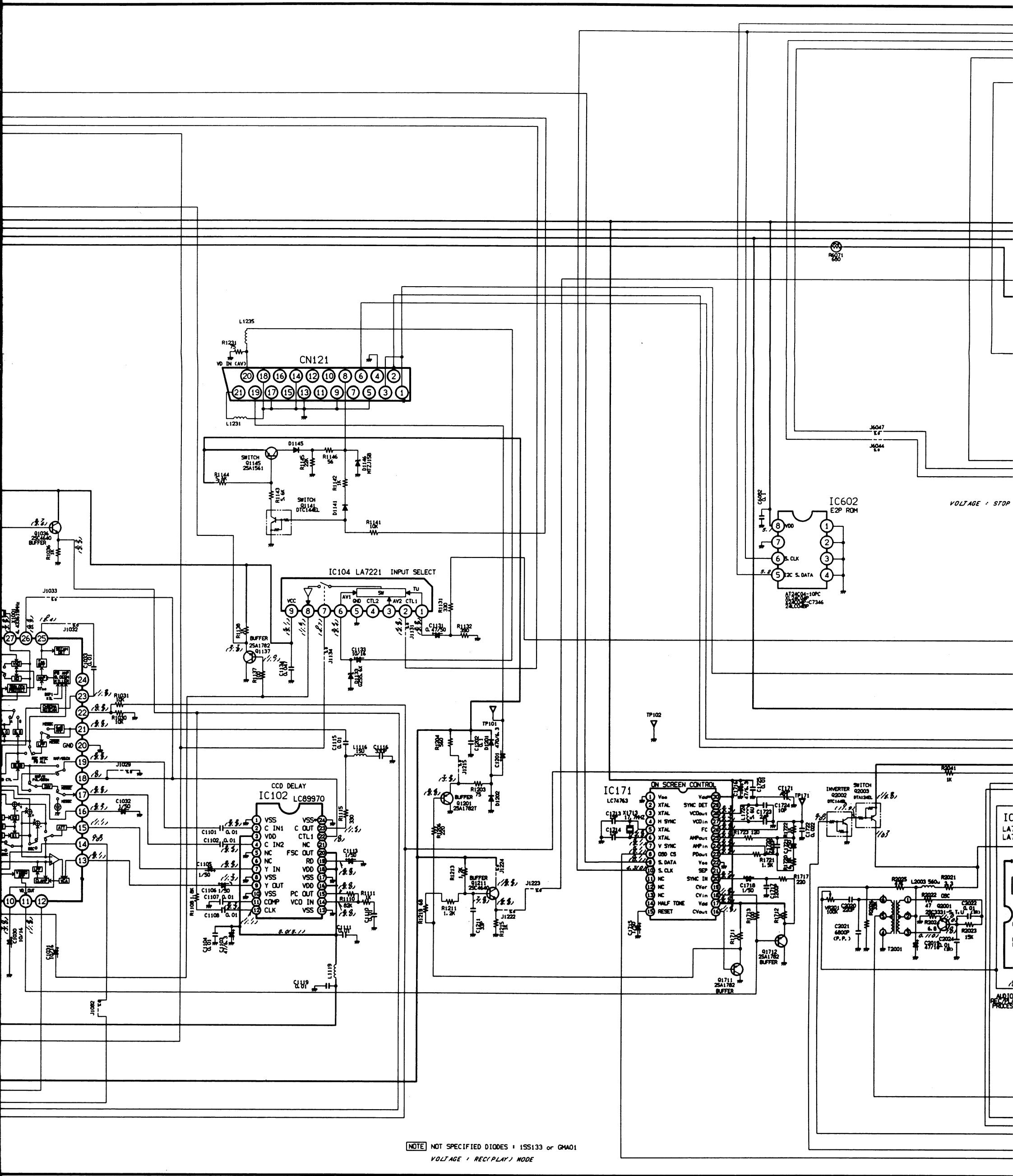
## CP-1 BOARD (VD-A, AD-A & TN-A) VIDEO, AUDIO & TUNER IF CONNECTION (SLV-E260VP & SLV-E260AP)

– Ref. No.: CP-1 Board; 10,000 series –

• See page 4-7 to 4-8 for Printed Wiring Board.



AP)




NOTE NOT SPECIFIED DIODES : 1SS133 or GMA01

*VOLTAGE : REC(PLAY) MODE*

12 13 14 15 16 17 18 19 20 21 22 23

I2CS DATA
I2CS CLK
PLL DATA
PLL CLK
AFT C
TO SY-A
PLL CS
(SEE PAGE 4-45)

TU101
ANT
1 B.B (ALWAYS 5V)
2 GND
3 TP SG
4 M.B (SWD 5V)
5 NC
6 VIDEO IN
7 AUDIO IN
MOD.

8 PB 5V
9 BT 32V
10 CLOCK
11 DATA
12 ENABLE
13 GND
TU

14 NC
15 +B (SWD 12V)
16 AUDIO OUT
17 GND
18 AFT OUT
19 NC
20 VIDEO OUT
IF

IC602
E2P ROM
8 VDD
7
6 S. CLK
5 I2C S. DATA
AT24C04-10PC
24LC04BP
24LC04BP-C7346

VOLTAGE : STOP MODE

IC171
LC74763
ON SCREEN CONTROL
Vss
XTAL
XTAL
H SYNC
XTAL
V SYNC
OSD CS
S. DATA
S. CLK
NC
NC
NC
HALF TONE
RESET
SYNC DET
VCOout
VCOin
FC
AMPout
AMPin
PDout
Vss
SEP
SYNC IN
CVor
CVin
Vdd
CVout
INVERTER Q2002
SWITCH Q2003
Q1712 2SA1762 BUFFER
Q1711 2SA1762 BUFFER

IC201
LA7283M
LA7285M
REC
MUTE
LINE IN
EP
RIPPLE FILTER
MUTE
ALC
ALC DET
REC
PB
TU
LINE
GND
AUDIO REC/PLAY PROCESS

CN201
1 GND
2 R/P HEAD(P)
3 R/P HEAD(R)
4 ERASE(A.E.)
5 ERASE(A.E.)
6 ERASE(F.E.)
7 GND
TO MC-5 CN841 Pin3-Pin6
TO FE HEAD
(SEE PAGE 4-3)

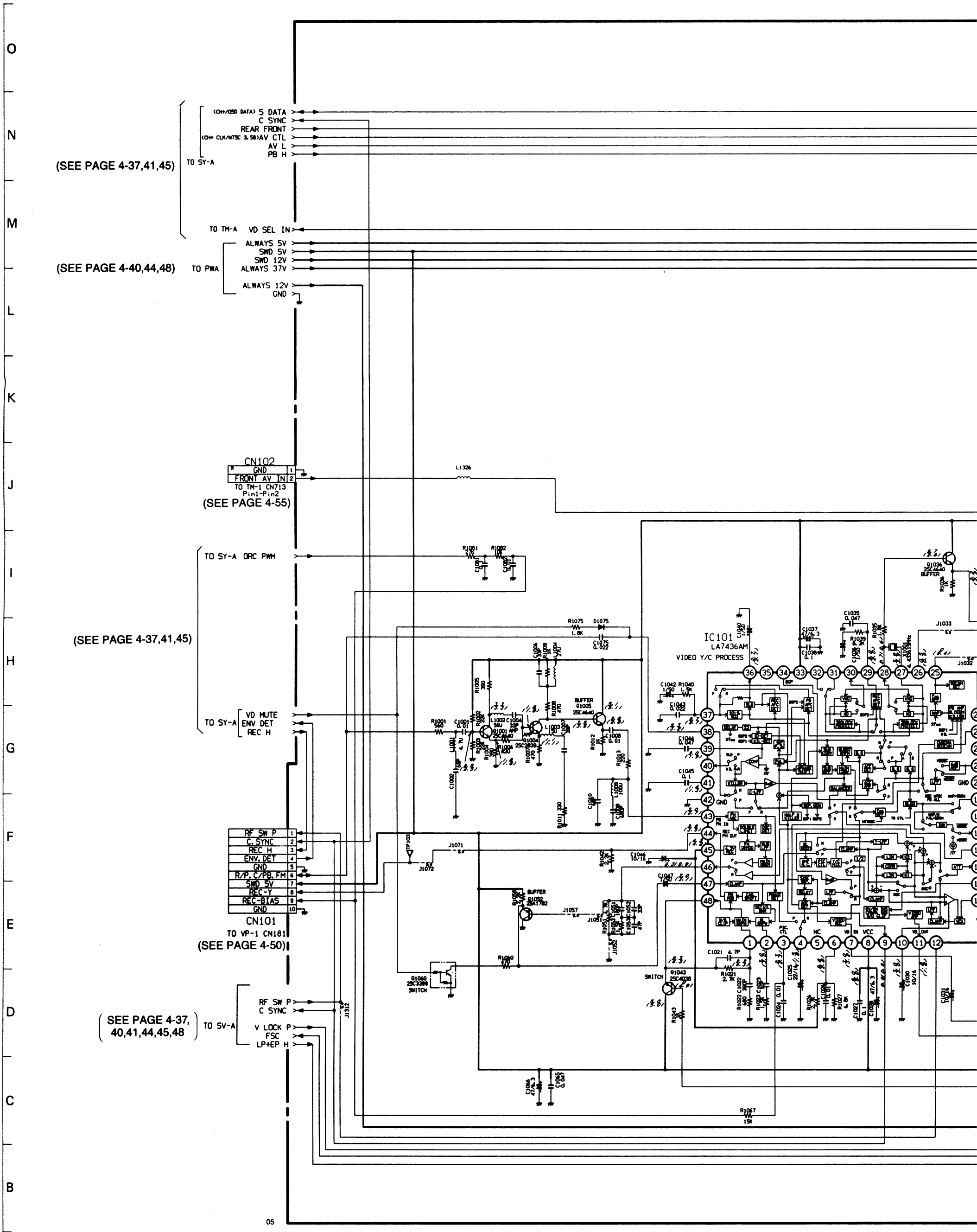
INPUT SEL A
A MUTE
SHORT TEST
AD REC H
OSD CS_TUNER MUTE
TO SY-A
( SEE PAGE 4-37, 40,41,44,45,48 )

or GMA01

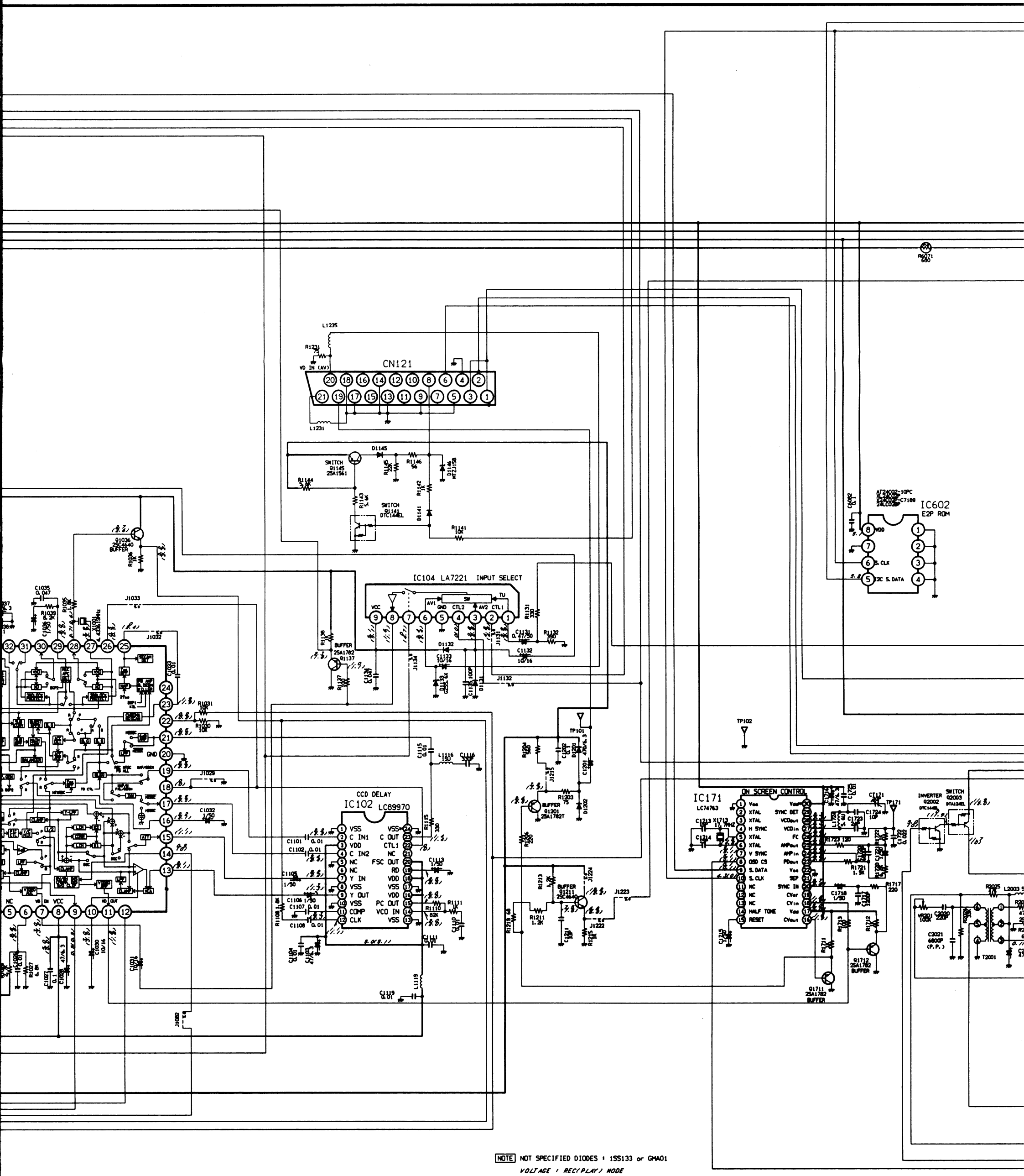
19 20 21 22 23 24 25 26 27 28 29 30

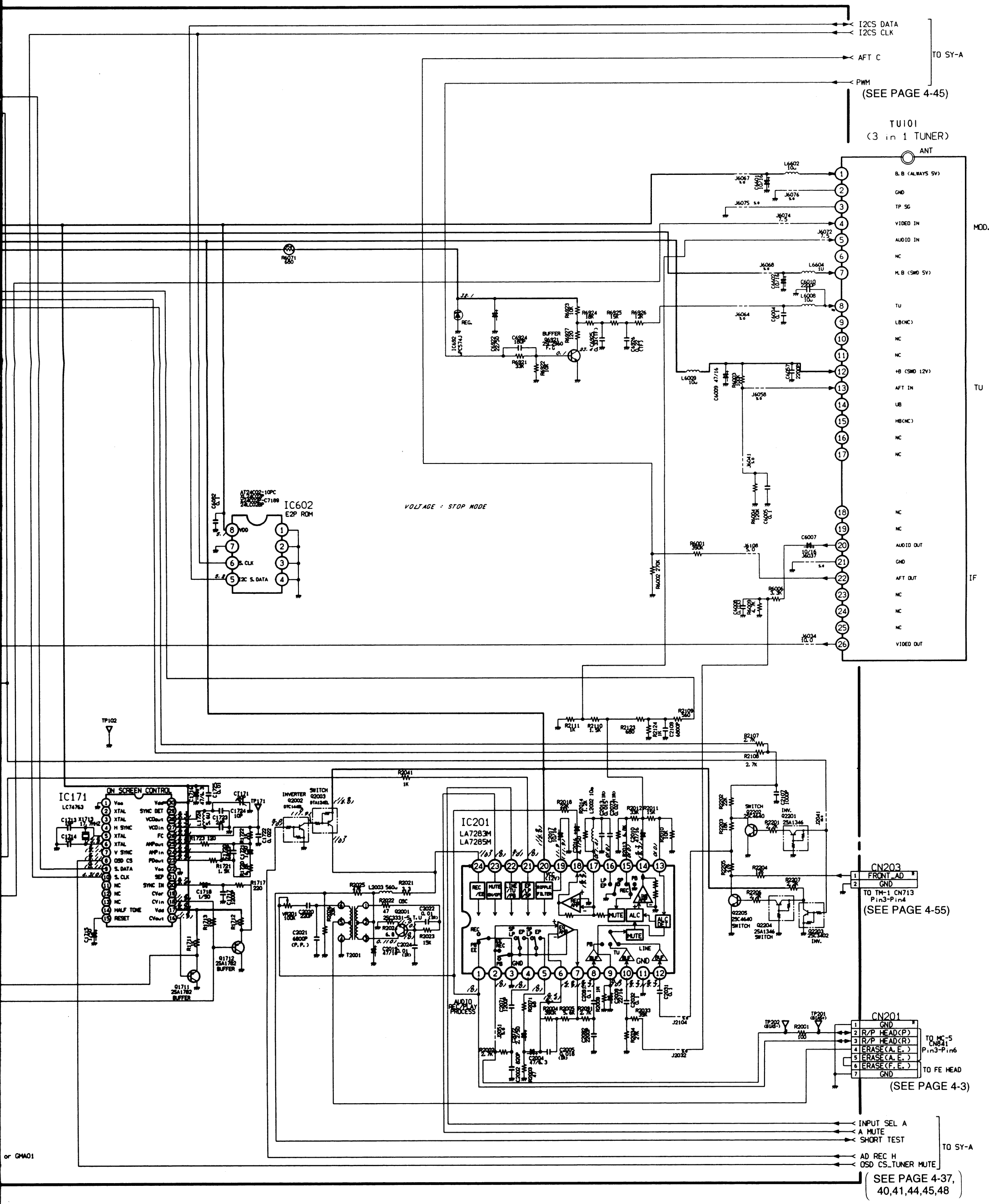
## CP-1 BOARD (VD-A, AD-A & TN-A) VIDEO, AUDIO & TUNER IF CONNECTION (SLV-E275UX)

– Ref. No.: CP-1 Board; 10,000 series –  • **See page 4-7 to 4-8 for Printed Wiring Board.**



)

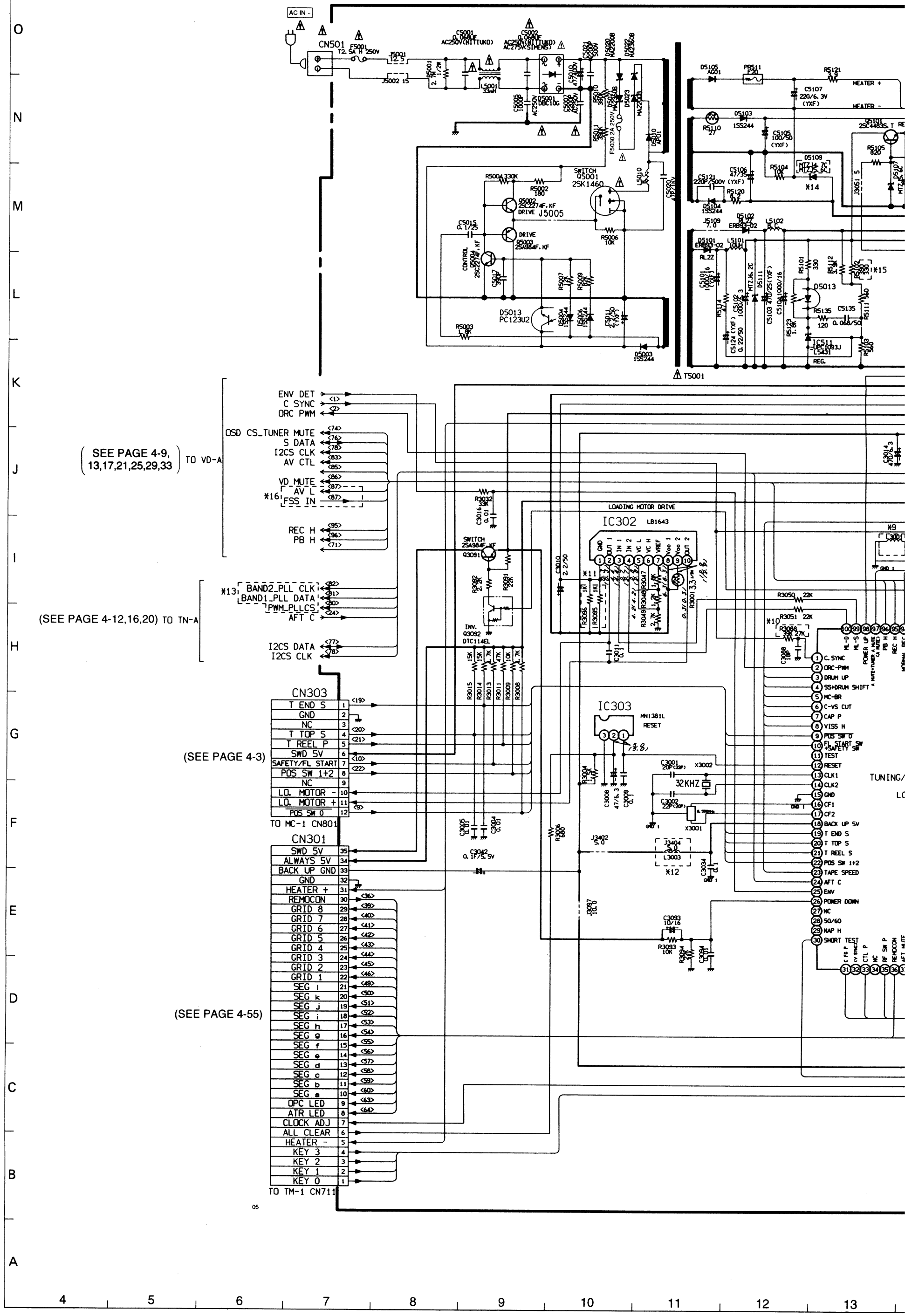

CN121
L1235
L1231
R1231
VD IN (AV)
SWITCH Q1145 2SA1561
SWITCH Q1141 DTC144EL
D1145
D1146 MTZJ15B
R1141 10K
R1142 1K
R1143 5.6K
R1144 5.6K
R1145 22K
R1146 56
IC104 LA7221 INPUT SELECT
VCC
GND
CTL2
CTL1
AV1
AV2
SW
TU
BUFFER 2SA1782 Q1137
Q1036 2SC4640 BUFFER
IC602 E2P ROM
VDD
S. CLK
I2C S. DATA
CCD DELAY
IC102 LC89970
VSS
C IN1
VDD
C IN2
NC
NC
Y IN
VSS
Y OUT
VSS
COMP
CLK
C OUT
CTL1
NC
FSC OUT
RD
VDD
VSS
VDD
PC OUT
VCO IN
VSS
IC171
ON SCREEN CONTROL
LC74763
Vss
XTAL
XTAL
H SYNC
XTAL
XTAL
V SYNC
OSD CS
S. DATA
S. CLK
NC
NC
NC
HALF TONE
RESET
SYNC DET
VCOout
VCOin
FC
AMPout
AMPin
PDout
Vss
SEP
SYNC IN
CVer
CVin
Vdd
CVout
INVERTER Q2002
SWITCH Q2003
T2001
TP101
TP102
TP171
BUFFER Q1201 2SA1782T
BUFFER Q1211 2SC4640
BUFFER Q1712 2SA1782
BUFFER Q1711 2SA1782
J1032
J1033
J1029
J1082
J1132
J1223
J1224
J1215
J1134
J1131
J1222
J1221
J1225
J1226
J1227
J1228
J1229
J1230
J1231
J1232
J1233
J1234
J1235
J1236
J1237
J1238
J1239
J1240
J1241
J1242
J1243
J1244
J1245
J1246
J1247
J1248
J1249
J1250
J1251
J1252
J1253
J1254
J1255
J1256
J1257
J1258
J1259
J1260
J1261
J1262
J1263
J1264


I2CS DATA
I2CS CLK
TO SY-A
AFT C
PWM
(SEE PAGE 4-45)
TU101
(3 in 1 TUNER)
ANT
B.B (ALWAYS 5V)
GND
TP SG
VIDEO IN
AUDIO IN
NC
M.B (SWD 5V)
TU
LB(NC)
NC
NC
+B (SWD 12V)
AFT IN
UB
MB(NC)
NC
NC
NC
NC
AUDIO OUT
GND
AFT OUT
NC
NC
NC
VIDEO OUT
MOD.
TU
IF
IC602
E2P ROM
VOLTAGE : STOP MODE
IC171
LC74763
ON SCREEN CONTROL
IC201
LA7283M
LA7285M
AUDIO REC/PLAY PROCESS
CN203
FRONT_AD
GND
TO TM-1 CN713 Pin3-Pin4
(SEE PAGE 4-55)
CN201
GND
R/P HEAD(P)
R/P HEAD(R)
ERASE(A.E.)
ERASE(A.E.)
ERASE(F.E.)
GND
TO MC-5 CN841 Pin3-Pin6
TO FE HEAD
(SEE PAGE 4-3)
INPUT SEL A
A MUTE
SHORT TEST
AD REC H
OSD CS_TUNER MUTE
TO SY-A
(SEE PAGE 4-37, 40,41,44,45,48)
or GMA01

## CP-1 BOARD (SY-A, SV-A & PW-A) SYSTEM CONTROL, SERVO & POWER SUPPLY (SLV-E205UY, SLV-E205EY, SLV-E210AE & SLV-E210CP)

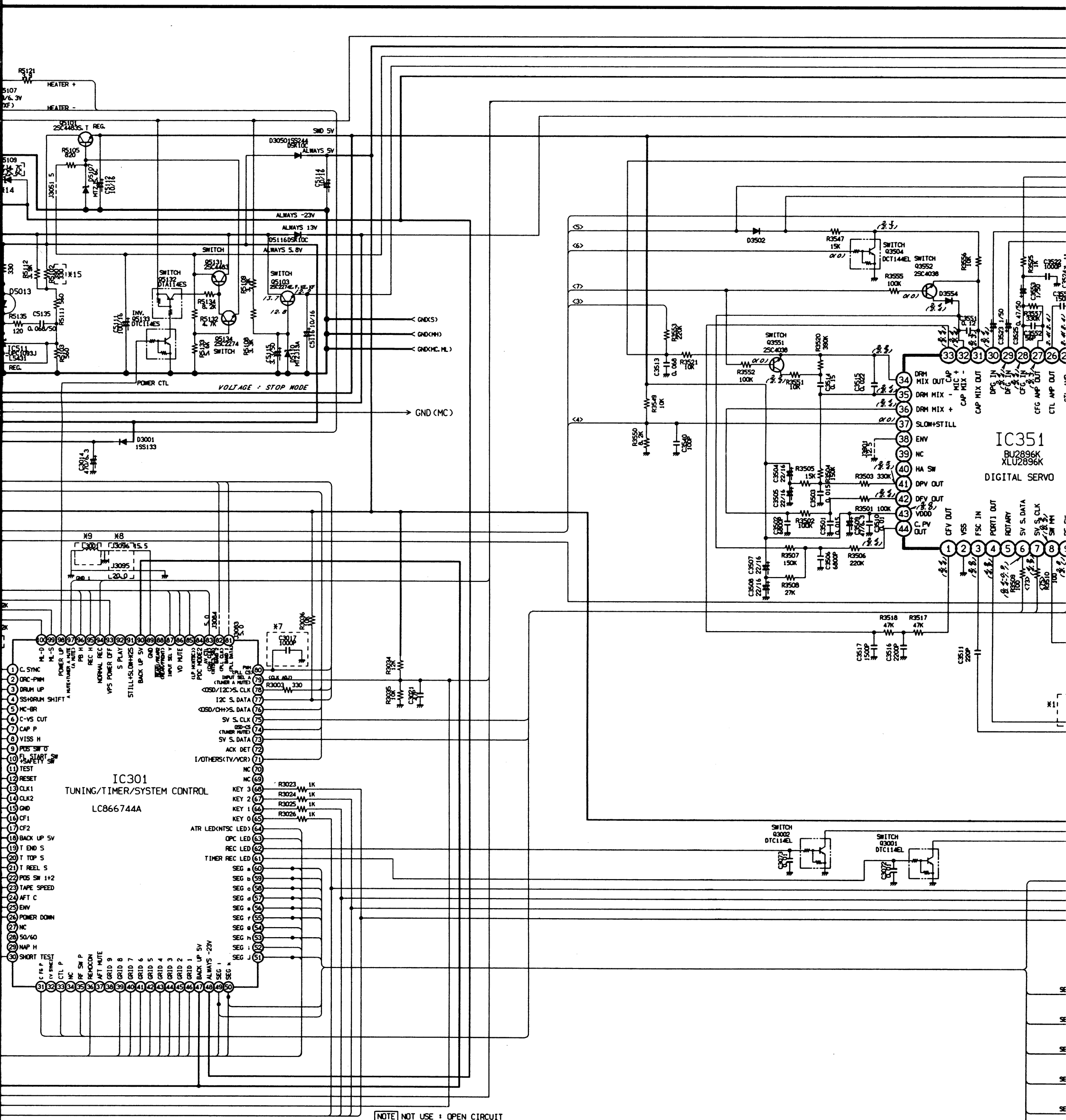
– Ref. No.: CP-1 Board; 10,000 series –

• See page 4-7 to 4-8 for Printed Wiring Board.




## SERVO/SYSTEM CONTROL, POWER

CP-1




| | ×1 | ×2 | ×3 | ×4 | ×5 | ×6 | ×7 | ×8 | ×9 | ×10 | ×11 | ×12 | ×13 | ×14 | ×15 | ×16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SLV-E205UY | USE | NOT USE | USE | NOT USE | NOT USE | USE | USE | USE | NOT USE | 27K | USE | J3404 | —— —— PWM | MTZJ5.6C | 390 | AV L |
| SLV-E205EY | USE | USE | NOT USE | NOT USE | NOT USE | USE | NOT USE | NOT USE | USE | 39K | USE | L3003 | PLL CLK PLL DATA PLL CE | MTZJ5.6C | 390 | AV L |
| SLV-E210AE | NOT USE | USE | USE | USE | NOT USE | NOT USE | NOT USE | NOT USE | USE | 39K | USE | L3003 | PLL CLK PLL DATA PLL CE | MTZJ5.6C | 390 | AV L |
| SLV-E210CP | NOT USE | NOT USE | NOT USE | USE | USE | NOT USE | USE | NOT USE | USE | 27K | NOT USE | L3003 | BAND2 BAND1 PWM | MTZJ4.7C | 330 | FSS IN |

(SEE PAGE 4-9, 13,17,21,25,29,33)

GND
ALWAYS 37V
ALWAYS 5V
SWD 12V
ALWAYS 12V
ALWAYS -23V
SWD 5V
→ TO VD-A AD-A TN-A

SHORT TEST
INPUT SEL A
AD REC H
A MUTE
→ TO AD-A

(SEE PAGE 4-12,16,20, 24,28,32,36)

CN351 TO MH

| | |
|---|---|
| 1 | D-PG |
| 2 | GND |
| 3 | ALWAYS 13V(MH) |
| 4 | GND(MH) |
| 5 | D-VS |
| 6 | D-FG |

(SEE PAGE 4-3)

CN352 TO MC

| | |
|---|---|
| 1 | C-FG |
| 2 | GND |
| 3 | GND(MC) |
| 4 | ALWAYS 13V(MC) |
| 5 | F/R |
| 6 | C-VS |
| 7 | SWD 5V |
| 8 | NC |

(SEE PAGE 4-3)

CN353

| | |
|---|---|
| 1 | CTL - |
| 2 | CTL + |

(SEE PAGE 4-3)

TO MC-5 CN841 Pin1~Pin2

IC351
BU2896K
XLU2896K
DIGITAL SERVO

V LOCK P
RF SW P
LP+EP H
FSC
→ TO VD-A

(SEE PAGE 4-9, 13,17,21,25,29,33)

CN302

| | |
|---|---|
| 1 | ALWAYS 5V |
| 2 | REC LED |
| 3 | TIMER REC LED |
| 4 | SEG i |
| 5 | SEG k |
| 6 | SEG j |
| 7 | SEG h |
| 8 | KEY 0 |
| 9 | KEY 1 |
| 10 | KEY 2 |
| 11 | KEY 3 |

TO TM-2 CN721
(SEE PAGE 4-54)

| ※7 | ※8 | ※9 | ※10 | ※11 | ※12 | ※13 | ※14 | ※15 | ※16 |
|---|---|---|---|---|---|---|---|---|---|
| USE | USE | NOT USE | 27K | USE | J3404 | PWM | MTZJ5. 6C | 390 | AV L |
| OT USE | NOT USE | USE | 39K | USE | L3003 | PLL CLK<br>PLL DATA<br>PLL CE | MTZJ5. 6C | 390 | AV L |
| OT USE | NOT USE | USE | 39K | USE | L3003 | PLL CLK<br>PLL DATA<br>PLL CE | MTZJ5. 6C | 390 | AV L |
| USE | NOT USE | USE | 27K | NOT USE | L3003 | BAND2<br>BAND1<br>PWM | MTZJ4. 7C | 330 | FSS IN |

NOTE NOT SPECIFIED DIODES : 1SS133 or GMA01

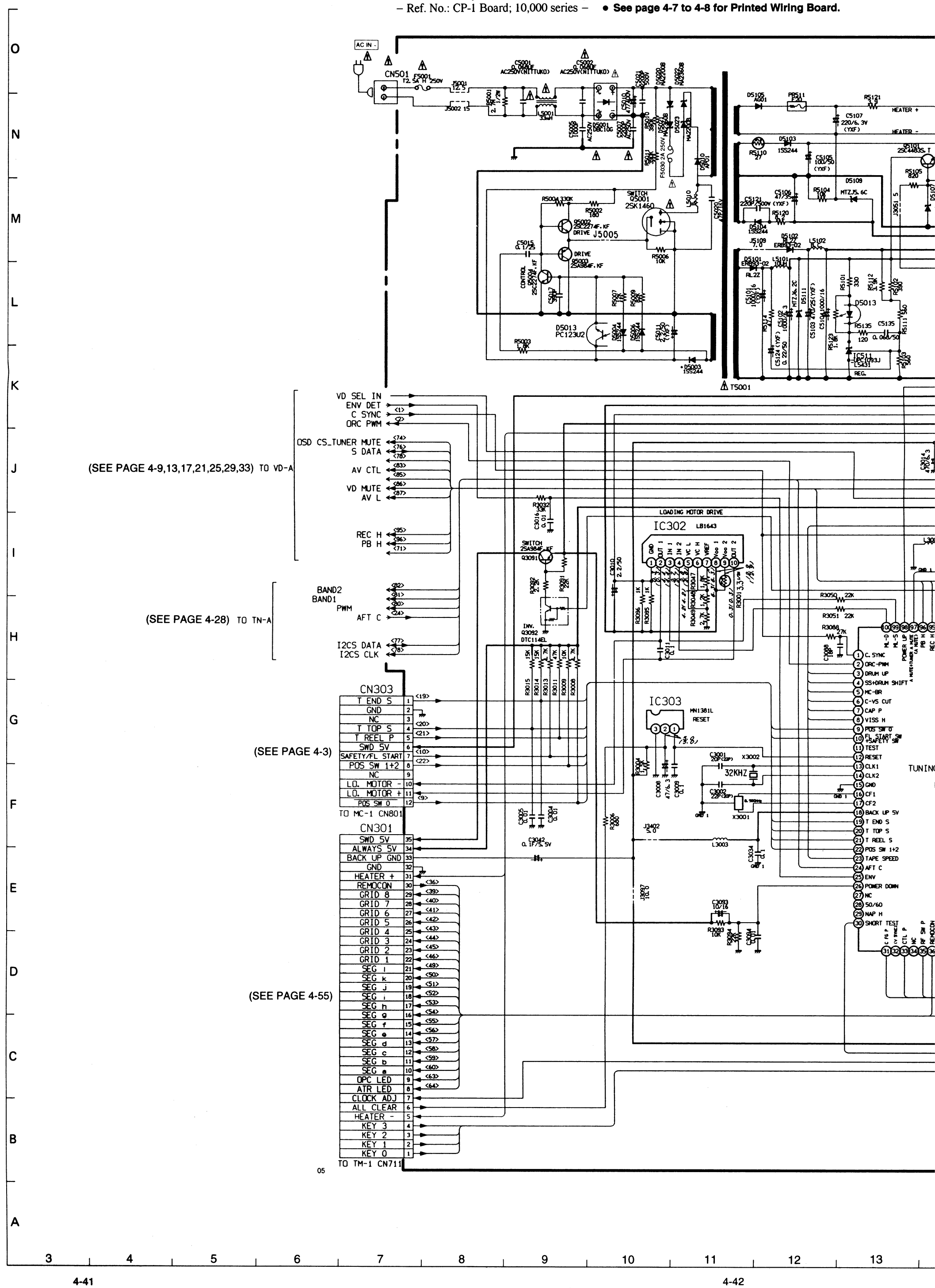
*VOLTAGE : REC(PLAY) MODE*

20 21 22 23 24 25 26 27 28 29 30

## CP-1 BOARD (SY-A, SV-A & PW-A) SYSTEM CONTROL, SERVO & POWER SUPPLY (SLV-E210EE

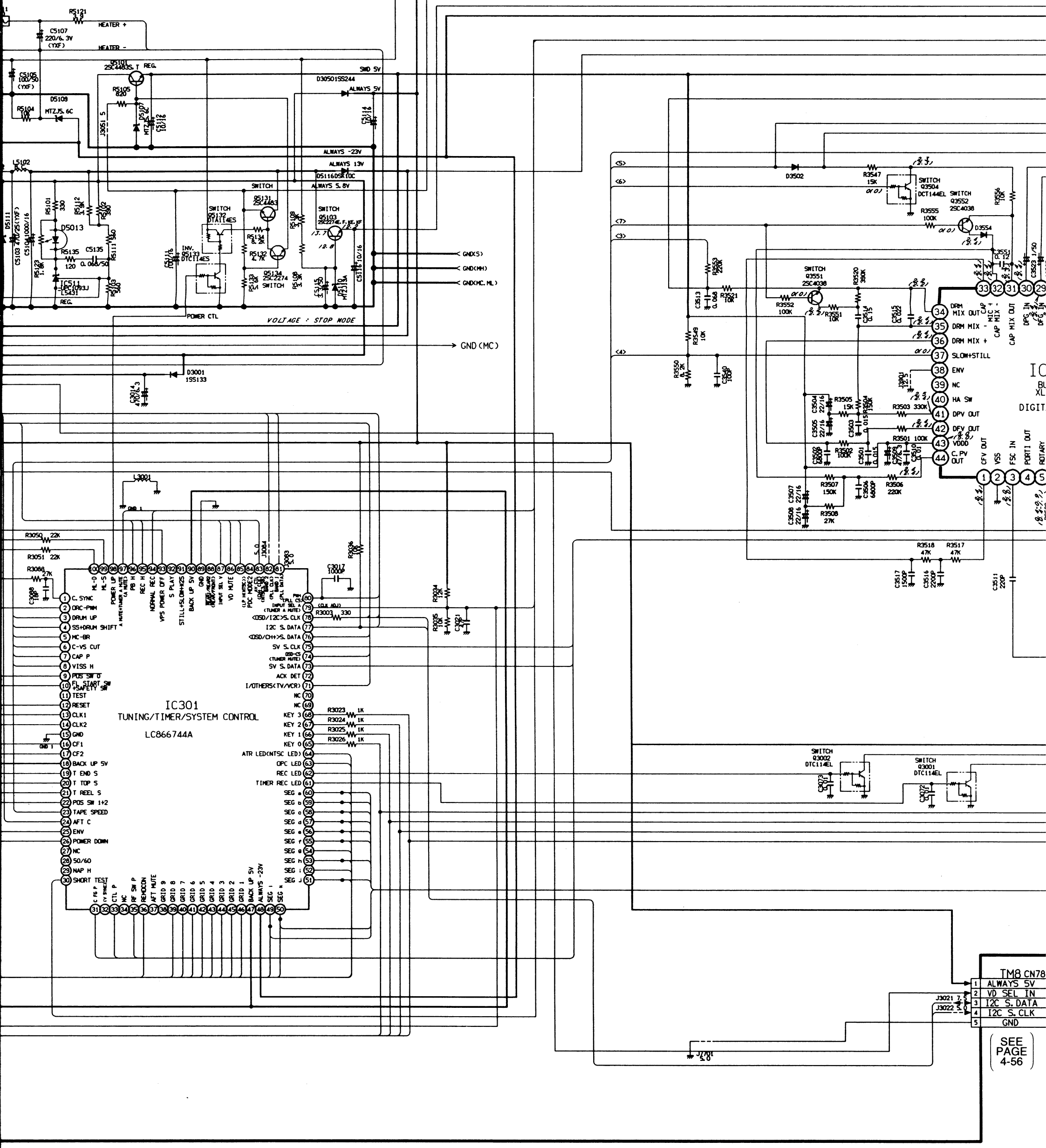
– Ref. No.: CP-1 Board; 10,000 series –

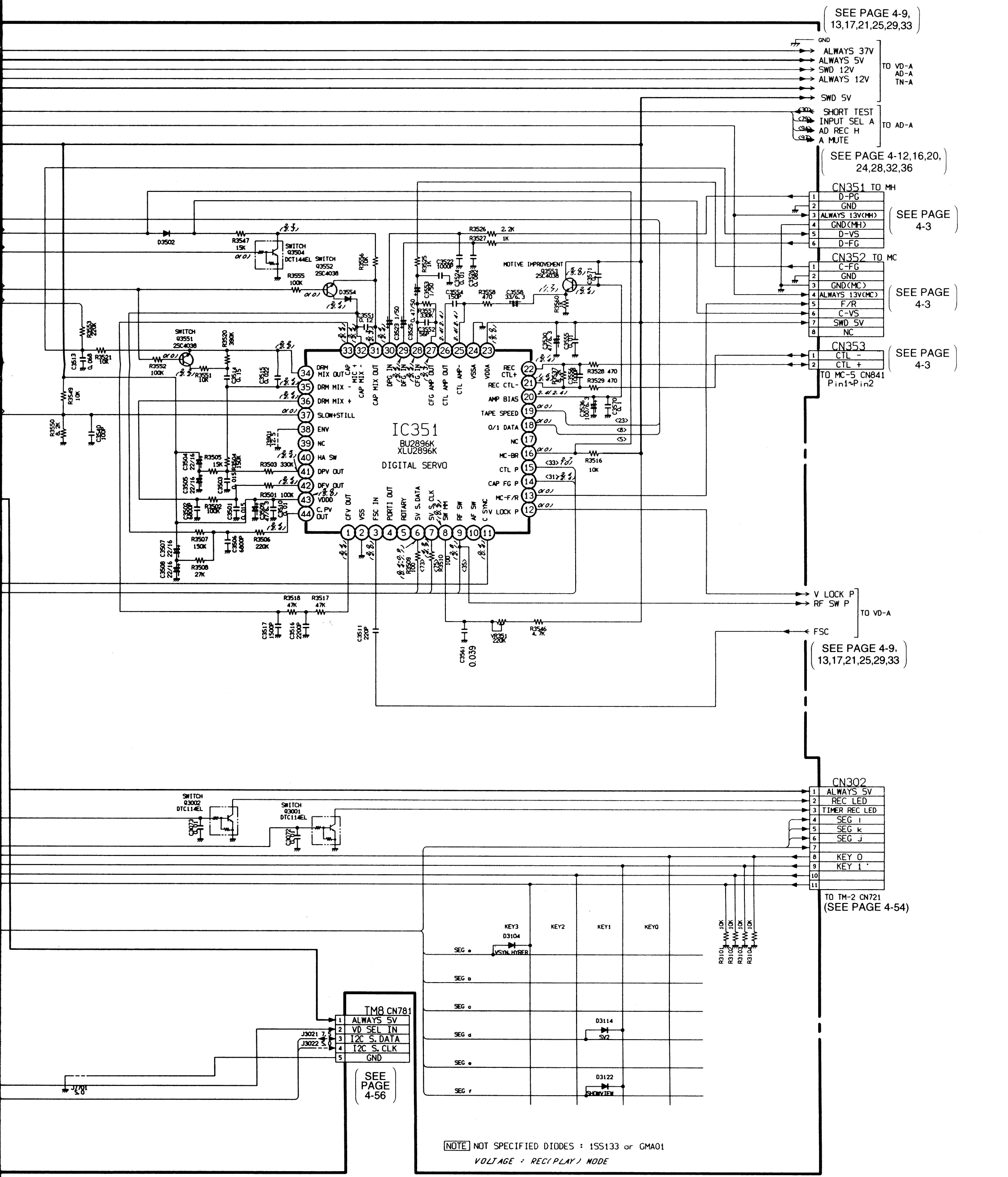
• See page 4-7 to 4-8 for Printed Wiring Board.




05

## ER SUPPLY (SLV-E210EE)
g Board.





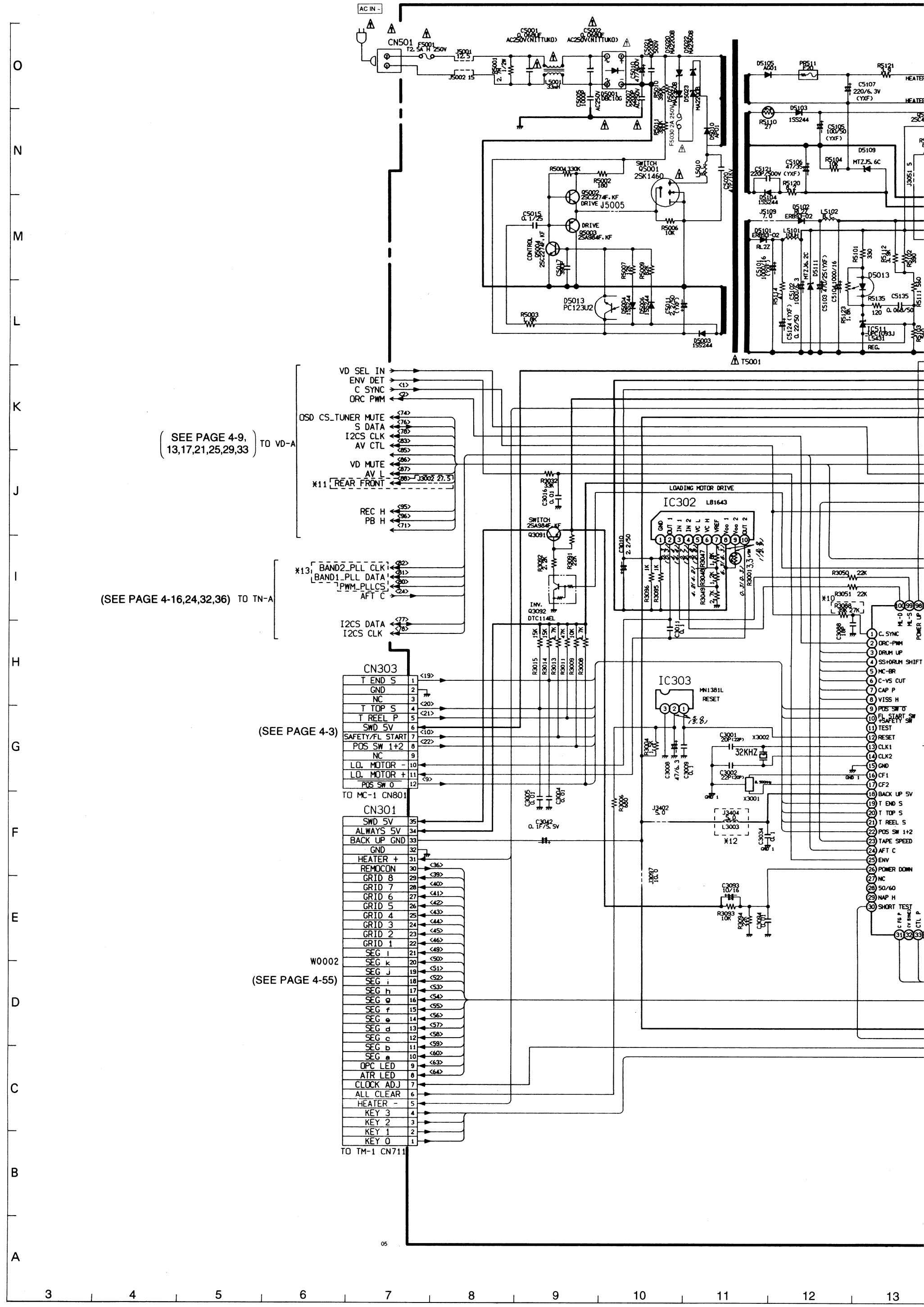

20 21 22 23 24 25 26



**SERVO/SYSTEM CONTROL, POWER**
CP-1

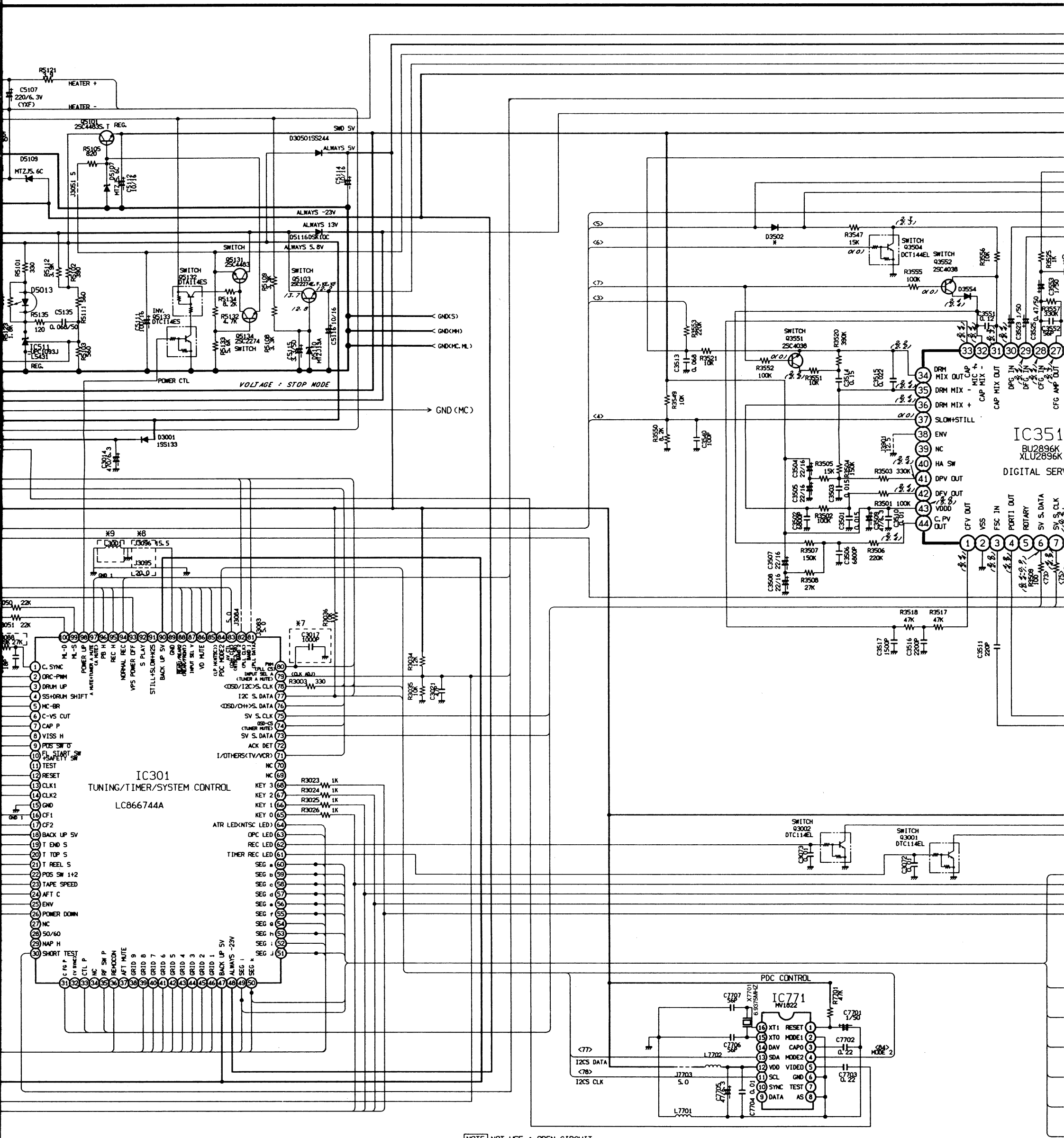
## CP-1 BOARD (SY-A, SV-A & PW-A & TM-A) SYSTEM CONTROL, SERVO & POWER SUPPLY & (SLV-E275UX, SLV-E275EX, SLV-E210VP, SLV-E210EX, SLV-E260VP, SLV-E260AP & SLV-E21

– Ref. No.: CP-1 Board; 10,000 series – • See page 4-7 to 4-8 for Printed Wiring Board.




# SERVO/SYSTEM CONTROL, POWER

**CP-1**




NOTE NOT USE : OPEN CIRCUIT

| | ✱1 | ✱2 | ✱3 | ✱4 | ✱5 | ✱6 | ✱7 | ✱8 | ✱9 | ✱10 | ✱11 | ✱12 | ✱13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SLV-E275UX | USE | NOT USE | USE | NOT USE | USE | USE | USE | USE | NOT USE | 27K | USE | J3404 | PWM |
| | | | | | | | | | | | | | |
| SLV-E210VP | NOT USE | USE | USE | USE | NOT USE | NOT USE | NOT USE | NOT USE | USE | 39K | NOT USE | L3003 | PLL CLK<br>PLL DATA<br>PLL CE |
| | | | | | | | | | | | | | |
| SLV-E260VP<br>SLV-E260AP | USE | USE | USE | USE | NOT USE | USE | NOT USE | NOT USE | USE | 39K | NOT USE | L3003 | PLL CLK<br>PLL DATA<br>PLL CE |
| SLV-E210UX | NOT USE | NOT USE | USE | NOT USE | NOT USE | NOT USE | USE | USE | NOT USE | 27K | NOT USE | J3404 | PWM |

(SEE PAGE 4-9, 13,17,21,25,29,33)

GND
ALWAYS 37V
ALWAYS 5V
SWD 12V
ALWAYS 12V
SWD 5V
→ TO VD-A AD-A TN-A

SHORT TEST
INPUT SEL A
AD REC H
A MUTE
→ TO AD-A

(SEE PAGE 4-12,16, 20,24,28,32,36)

CN351 TO MH

| | |
|---|---|
| 1 | D-PG |
| 2 | GND |
| 3 | ALWAYS 13V(MH) |
| 4 | GND(MH) |
| 5 | D-VS |
| 6 | D-FG |

(SEE PAGE 4-3)

CN352 TO MC

| | |
|---|---|
| 1 | C-FG |
| 2 | GND |
| 3 | GND(MC) |
| 4 | ALWAYS 13V(MC) |
| 5 | F/R |
| 6 | C-VS |
| 7 | SWD 5V |
| 8 | NC |

(SEE PAGE 4-3)

CN353

| | |
|---|---|
| 1 | CTL - |
| 2 | CTL + |

TO MC-5 CN841 Pin1~Pin2

(SEE PAGE 4-3)

IC351
BU2896K
XLU2896K
DIGITAL SERVO

V LOCK P
RF SW P
LP+EP H
FSC
→ TO VD-A (*1)

(SEE PAGE 4-9, 13,17,21,25,29,33)

CN302

| | |
|---|---|
| 1 | ALWAYS 5V |
| 2 | REC LED |
| 3 | TIMER REC LED |
| 4 | SEG i |
| 5 | SEG k |
| 6 | SEG j |
| 7 | SEG h |
| 8 | KEY 0 |
| 9 | KEY 1 |
| 10 | KEY 2 |
| 11 | KEY 3 |

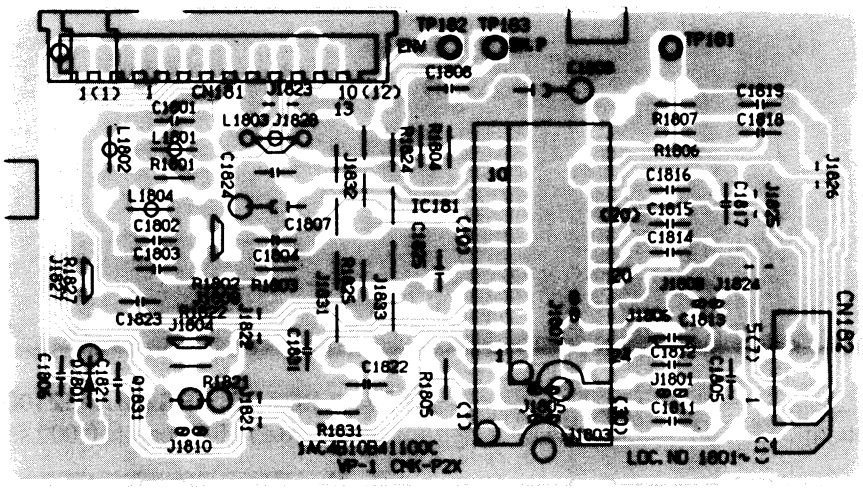
TO TM-2 CN721
(SEE PAGE 4-54)

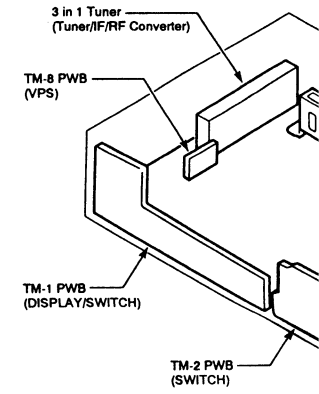
| | *6 | *7 | *8 | *9 | *10 | *11 | *12 | *13 |
|---|---|---|---|---|---|---|---|---|
| | USE | USE | USE | NOT USE | 27K | USE | J3404 | PWM |
| | | | | | | | | |
| E | NOT USE | NOT USE | NOT USE | USE | 39K | NOT USE | L3003 | PLL CLK<br>PLL DATA<br>PLL CE |
| | | | | | | | | |
| E | USE | NOT USE | NOT USE | USE | 39K | NOT USE | L3003 | PLL CLK<br>PLL DATA<br>PLL CE |
| E | NOT USE | USE | USE | NOT USE | 27K | NOT USE | J3404 | PWM |

NOTE NOT SPECIFIED DIODES : 1SS133 or GMA01

*VOLTAGE : REC(PLAY) MODE*

## VP-1 P.W.B.

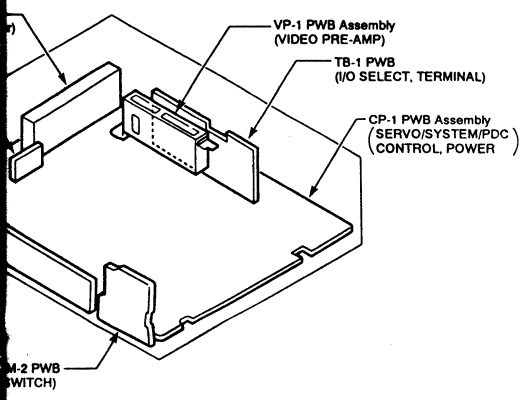


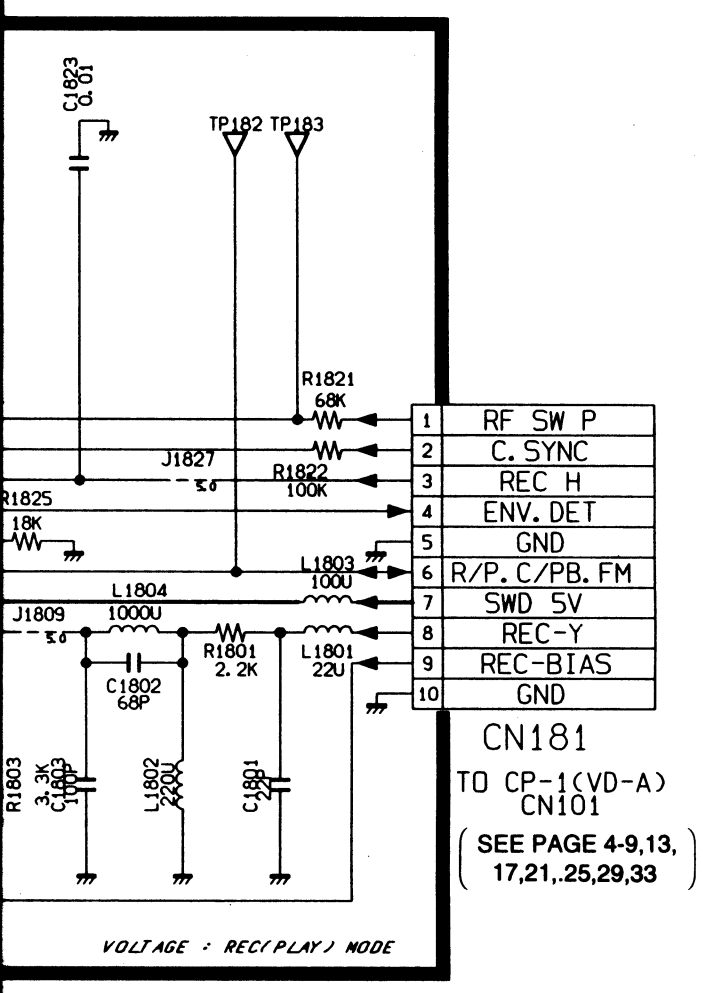

There are few cases that the part isn't mounted in

### VP-1 BOARD VIDEO PRE-AMP

– Ref. No.: VP-1 Board; 10,000 series –

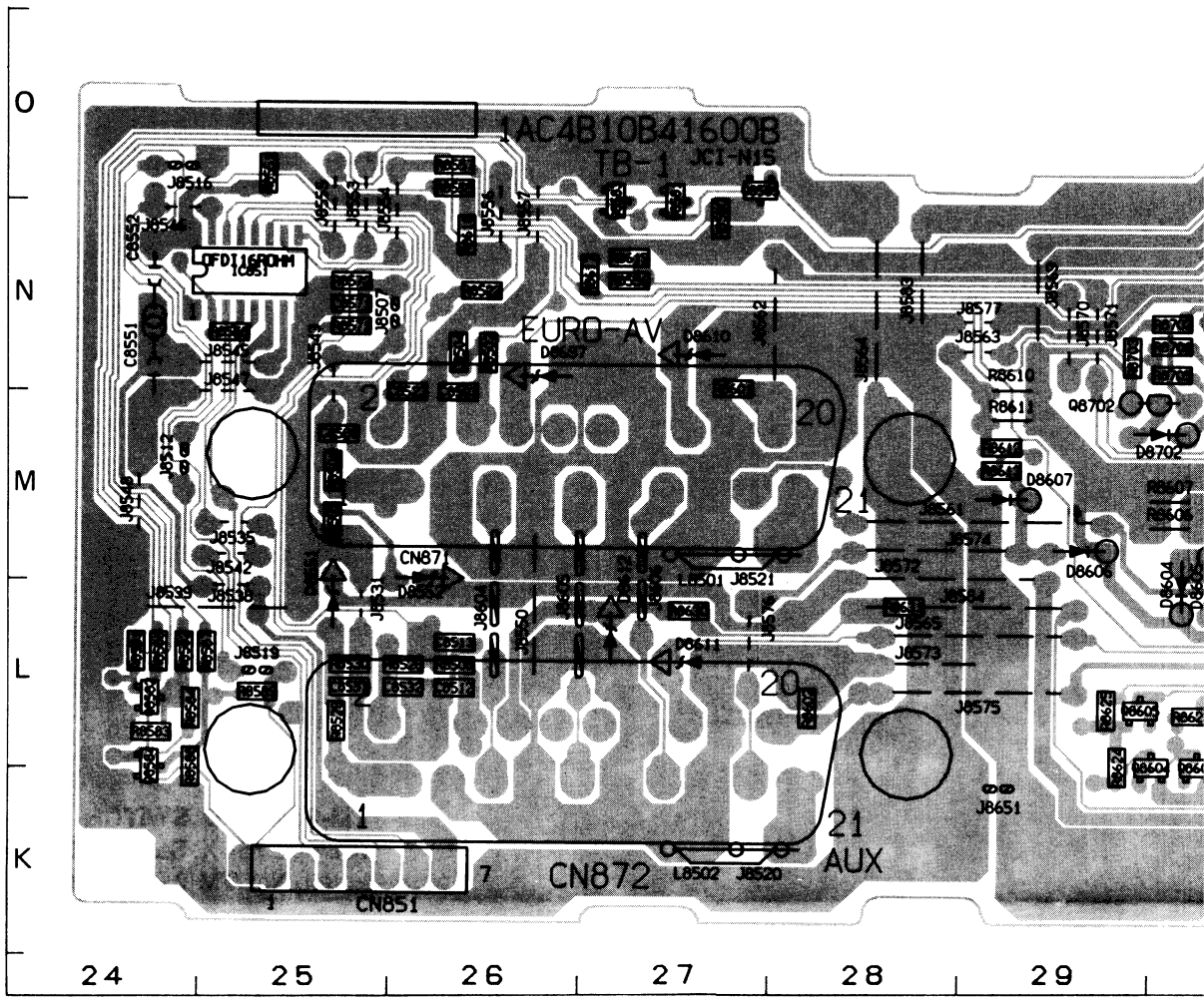



't mounted in this model is printed on this diagram.



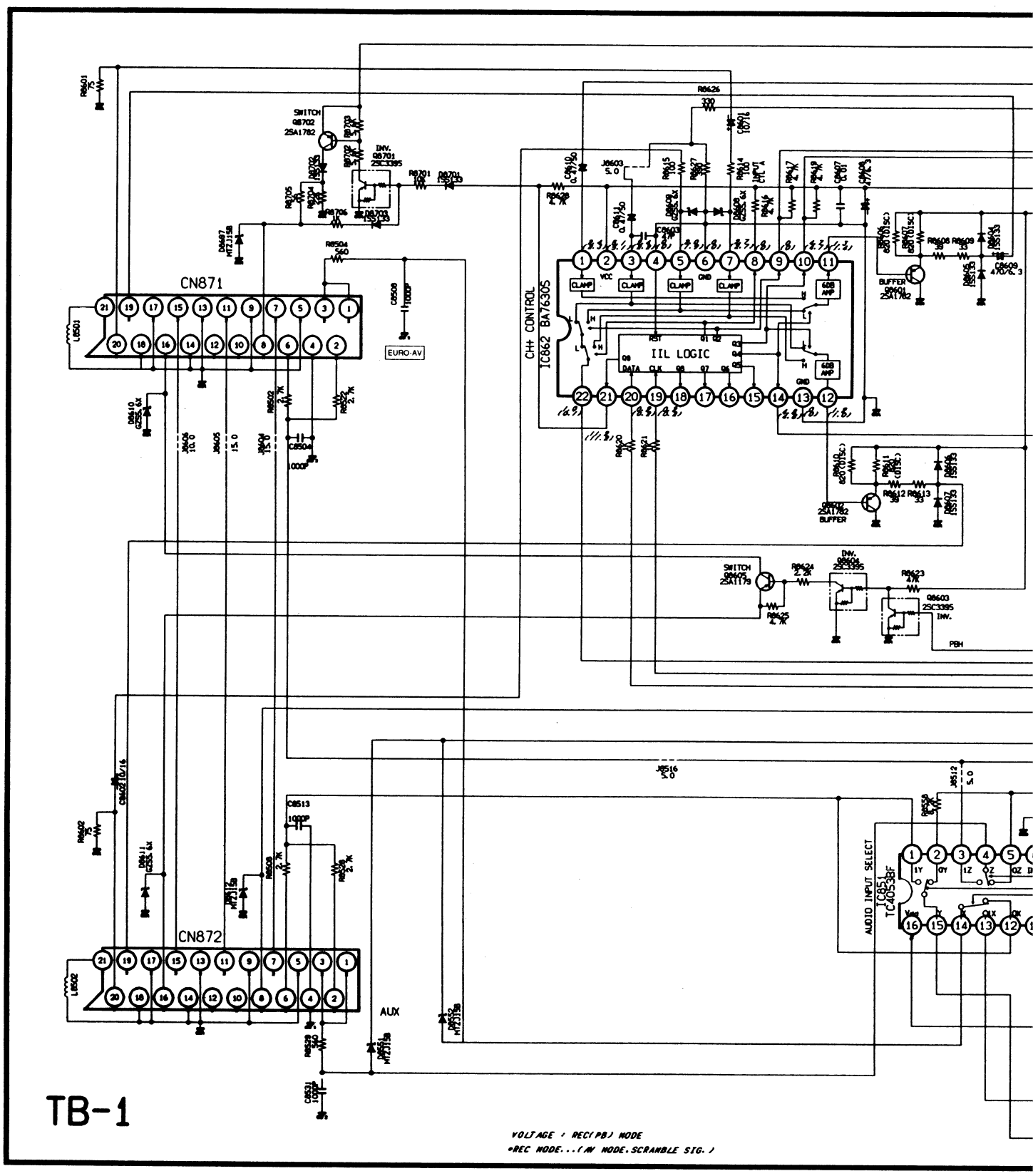

( SEE PAGE 4-9,13, 17,21,.25,29,33 )



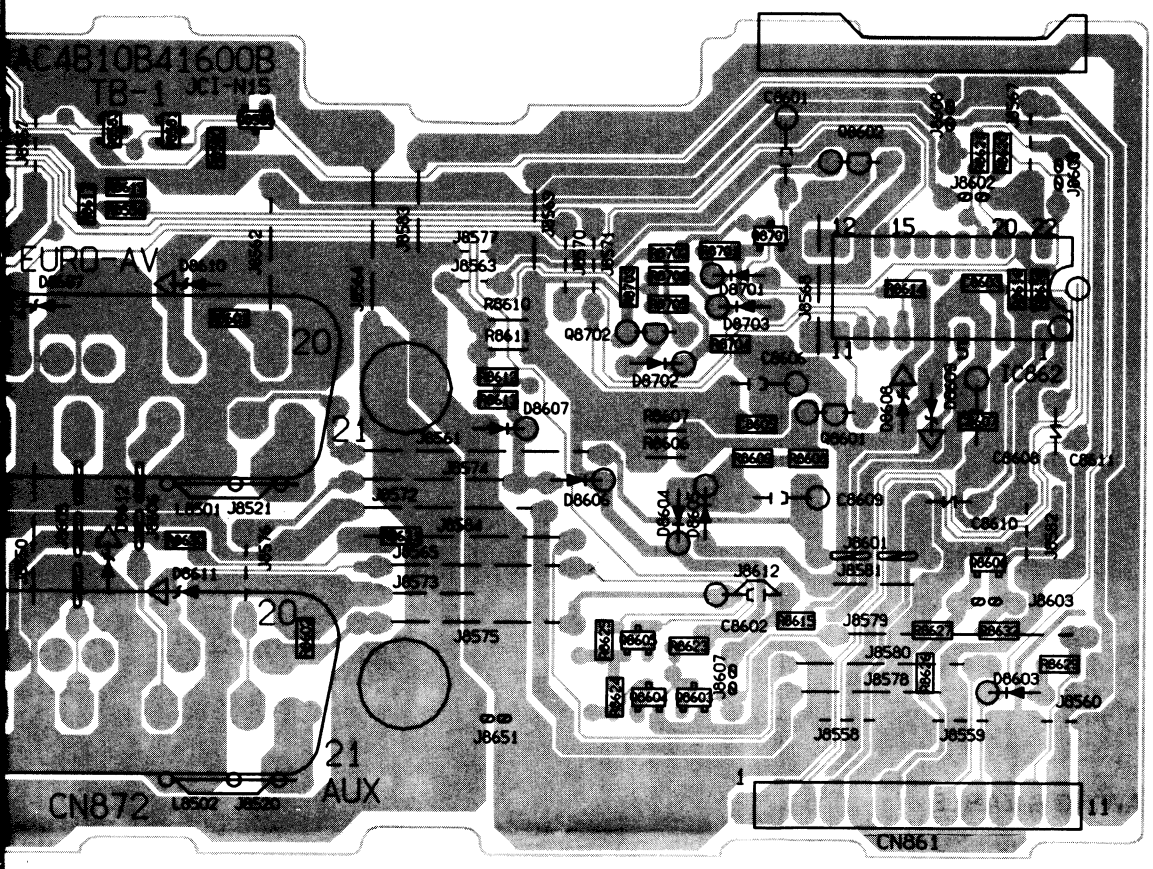



## TB-1 BOARD TERMINAL & INPUT SELECTION (SLV-E210CP)

– Ref. No.: TB-1 Board; 10,000 series –



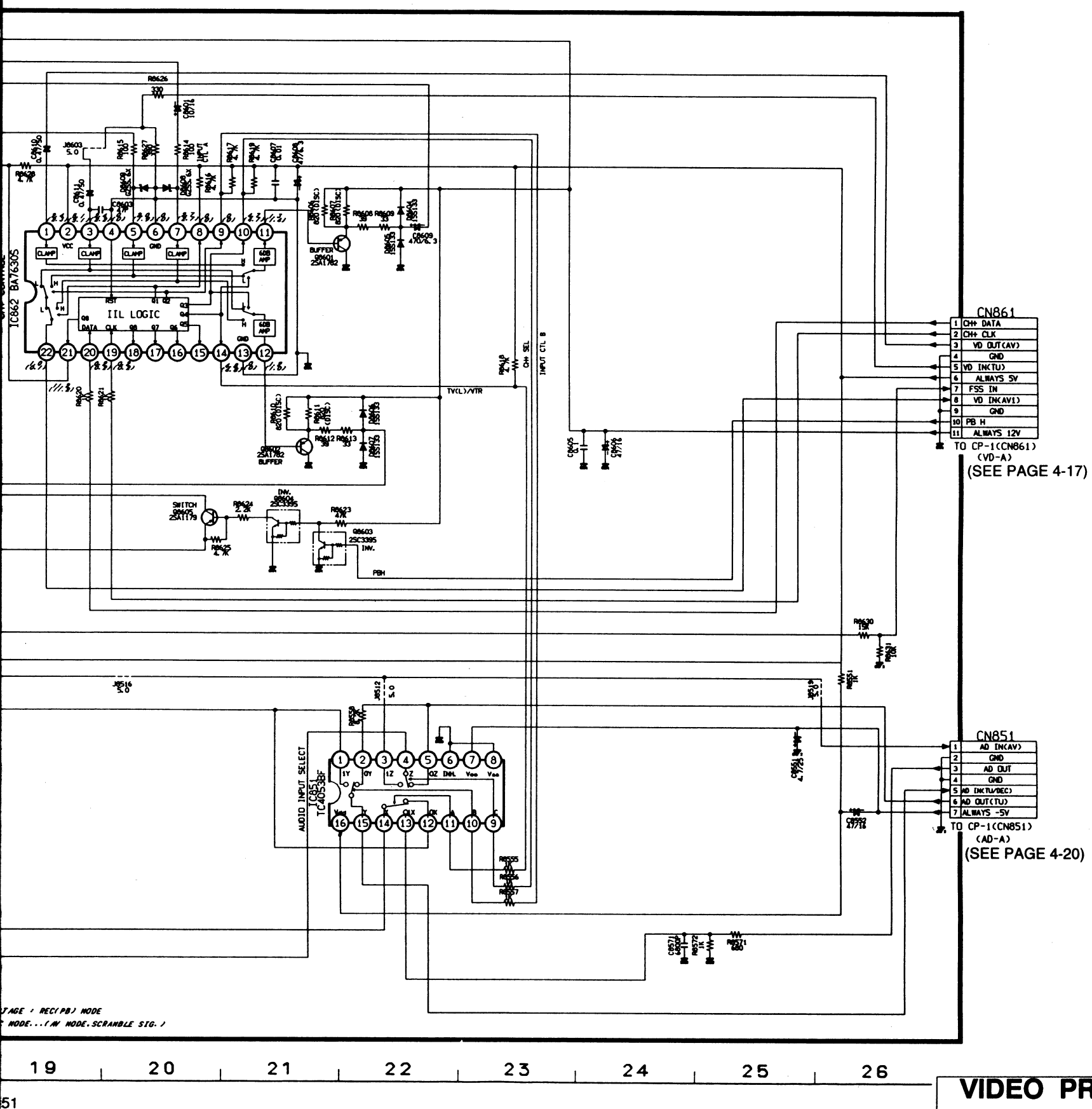
## TB-1 P.W.B. (SLV-E210CP)



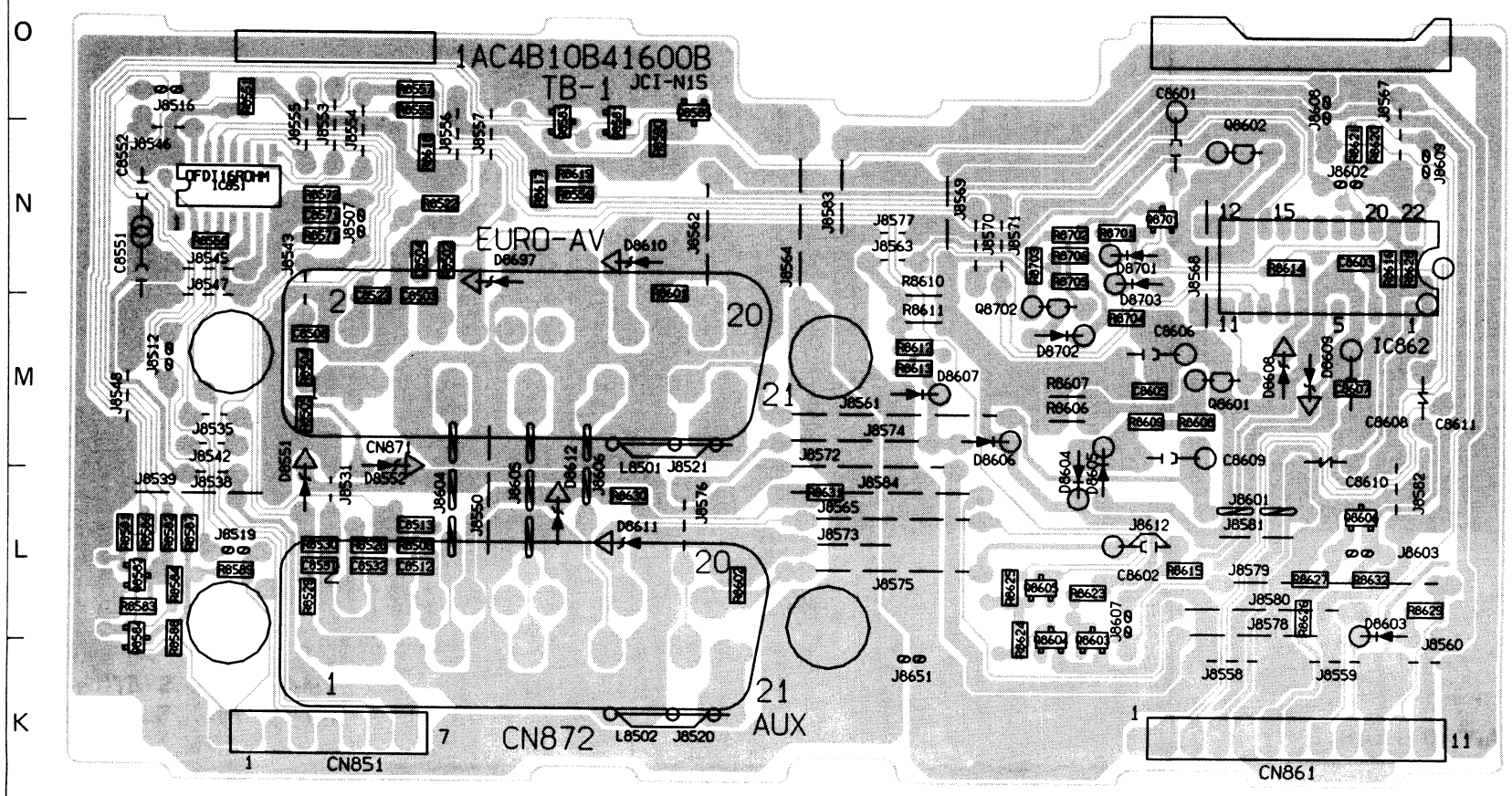

TB-1 BOARD

| | |
|---|---|
| CN851 | K-25 |
| CN861 | K-31 |
| CN871 | M-26 |
| CN872 | L-26 |
| D8551 | M-25 |
| D8552 | M-26 |
| D8604 | M-30 |
| D8605 | M-30 |
| D8606 | M-29 |
| D8607 | M-29 |
| D8608 | M-31 |
| D8609 | M-31 |
| D8610 | N-27 |
| D8611 | L-27 |
| D8612 | M-27 |
| D8697 | N-26 |
| D8701 | N-30 |
| D8702 | N-30 |
| D8703 | N-30 |
| IC851 | O-25 |
| IC862 | N-31 |
| Q8601 | N-31 |
| Q8602 | O-31 |
| Q8603 | L-30 |
| Q8604 | L-30 |
| Q8605 | L-30 |
| Q8701 | N-30 |
| Q8702 | N-30 |

(P)

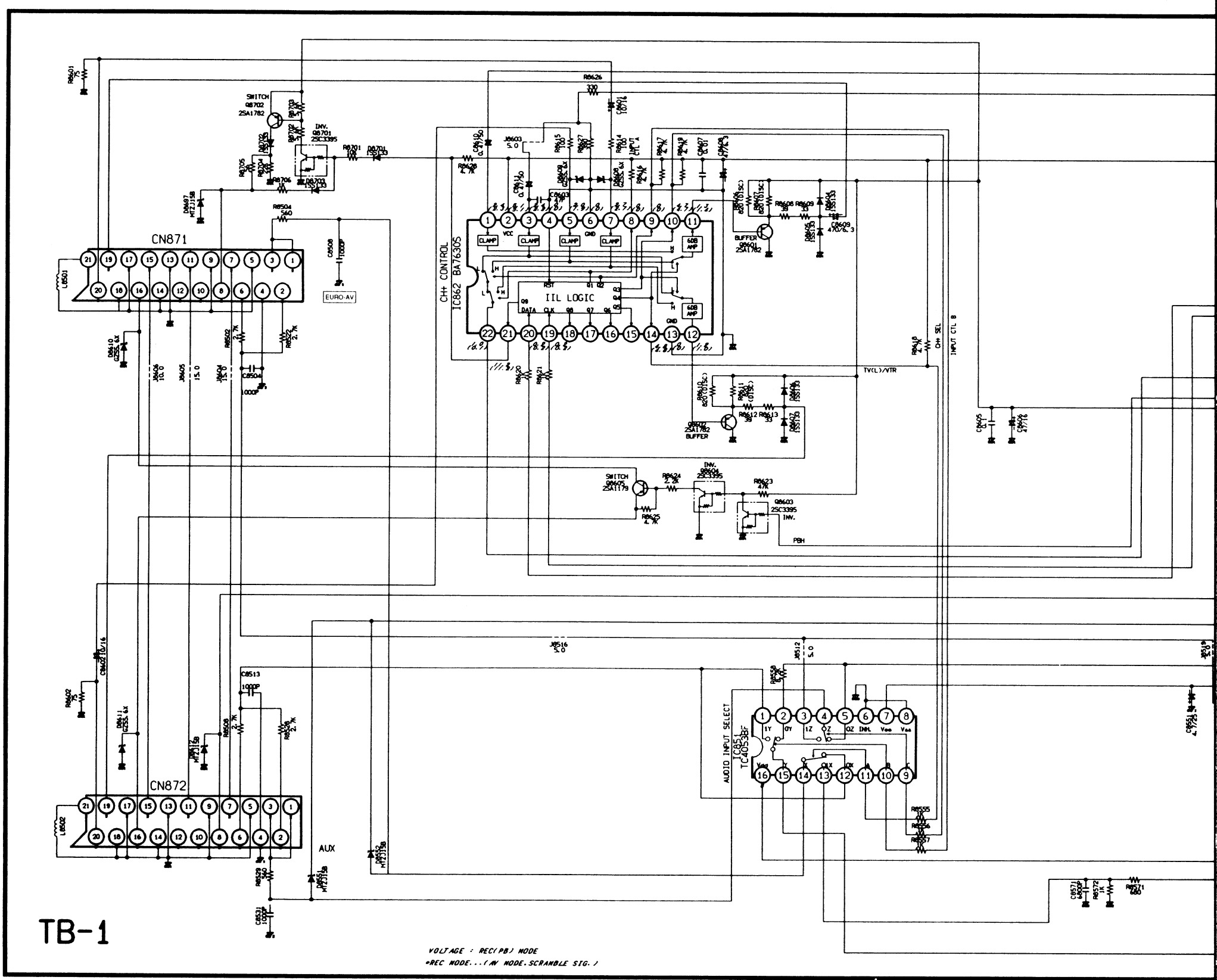


## TB-1 P.W.B. (SLV-E210CP)



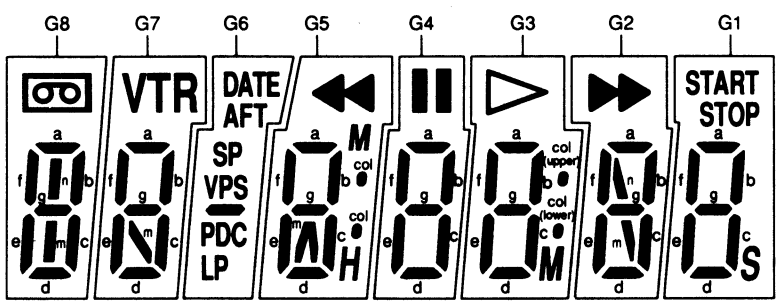

## TB-1 BOARD TERMINAL & INPUT SELECTION (SLV-E210CP)

– Ref. No.: TB-1 Board; 10,000 series –



## A7101 DISPLAY (FLD) GRID/ANODE ASSIGNMENT DRAWING & TABLE

### GRID & SEGMENT ASSIGNMENT

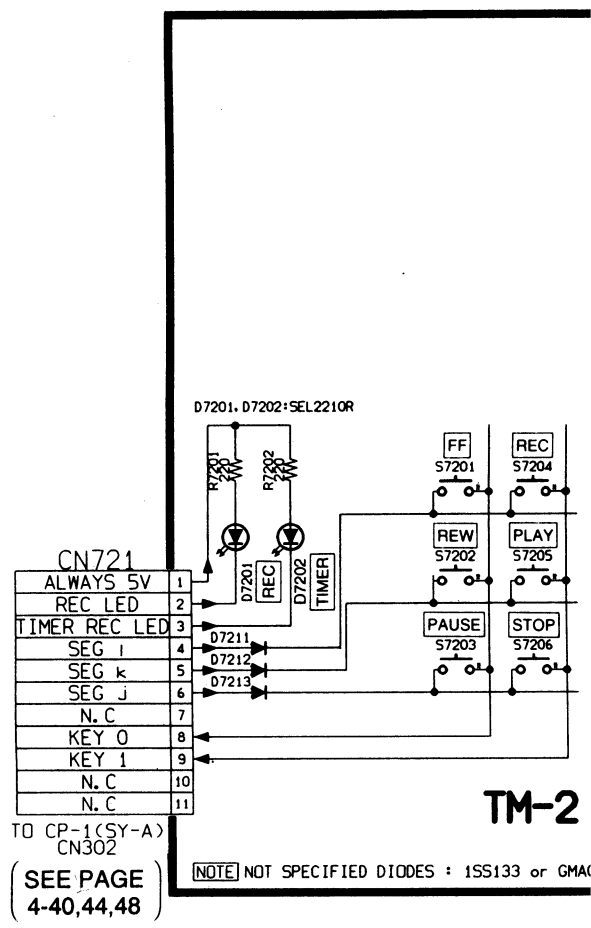



### ANODE CONNECTION

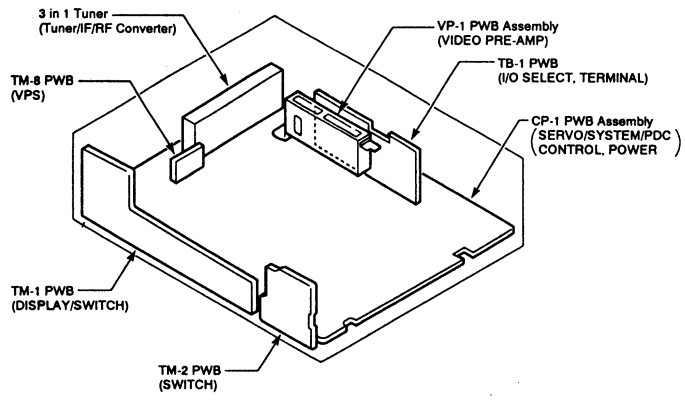
| GRID / SEGMENT | G8 | G7 | G6 | G5 | G4 | G3 | G2 | G1 |
|---|---|---|---|---|---|---|---|---|
| a | ⏀ | VTR | DATE | ◀◀ | ▮(left) | ▷ | ▶▶ | START |
| b | — | — | AFT | M | (right)▮ | — | — | STOP |
| c | a | a | SP | a | a | a | a | a |
| d | b | b | VPS | b | b | b | b | b |
| e | c | c | — | c | c | c | c | c |
| f | d | d | — | d | d | d | d | d |
| g | e | e | — | e | e | e | e | e |
| h | f | f | — | f | f | f | f | f |
| i | g | g | — | g | g | g | g | g |
| j | m,n | m | ▬ | m | — | col (upper) | m,n | — |
| k | — | — | PDC | col | — | col (lower) | — | — |
| l | — | — | LP | H | — | M | — | S |

### TM-2 BOARD SWITCH (SLV-E210VP, SLV-E210CP, SLV-E210AE, SLV-E210UX, SLV-E205UY, SLV-E205EY & SLV-E210EE)

– Ref. No.: TM-2 Board; 10,000 series –



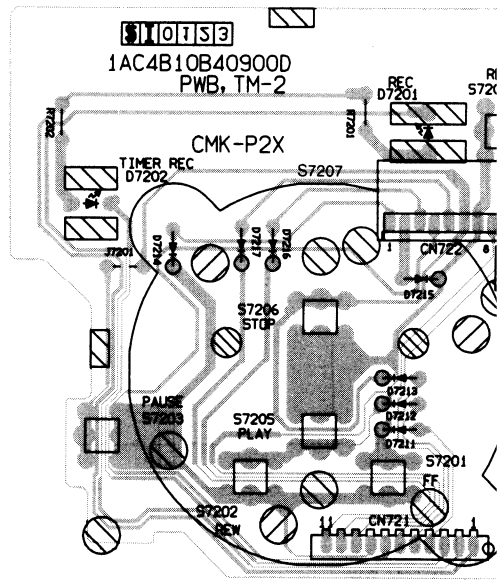

SEE PAGE 4-40,44,48


3 in 1 Tuner (Tuner/IF/RF Converter)
VP-1 PWB Assembly (VIDEO PRE-AMP)
TB-1 PWB (I/O SELECT, TERMINAL)
TM-8 PWB (VPS)
CP-1 PWB Assembly (SERVO/SYSTEM/PDC CONTROL, POWER)
TM-1 PWB (DISPLAY/SWITCH)
TM-2 PWB (SWITCH)

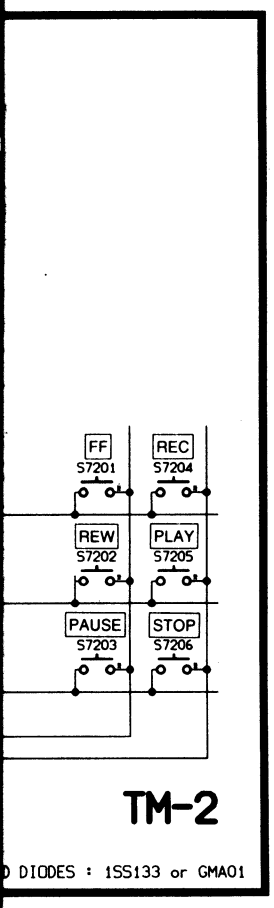
**TM-2 BOARD**

| | |
|---|---|
| CN721 | A-11 |
| D7201 | C-11 |
| D7202 | C-10 |
| D7211 | B-11 |
| D7212 | B-11 |
| D7213 | B-11 |
| D7214 | C-10 |
| D7215 | B-11 |
| D7216 | C-11 |
| D7217 | C-10 |

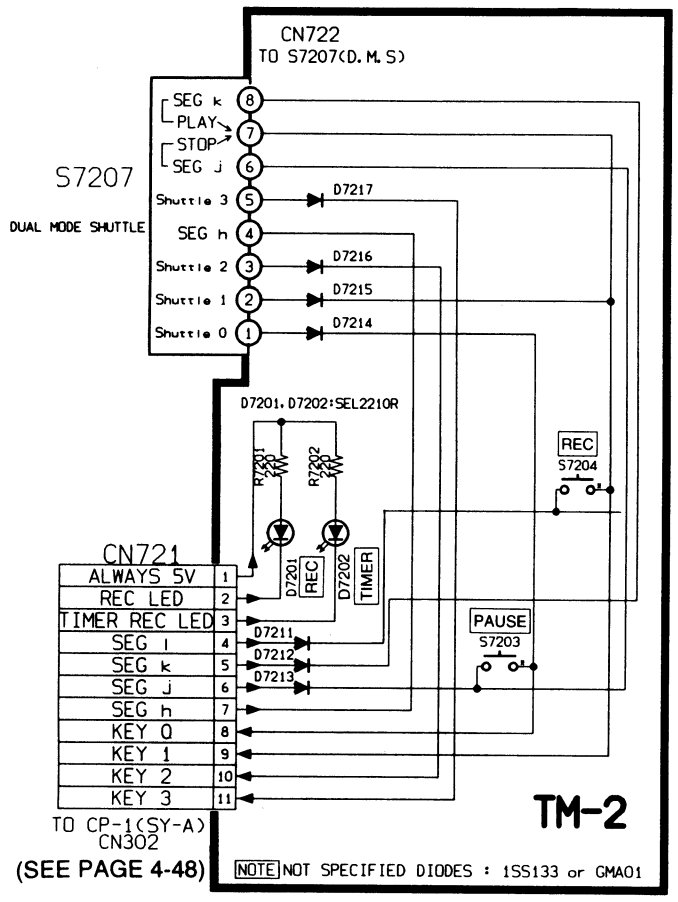
### TM-2 P.W.B.



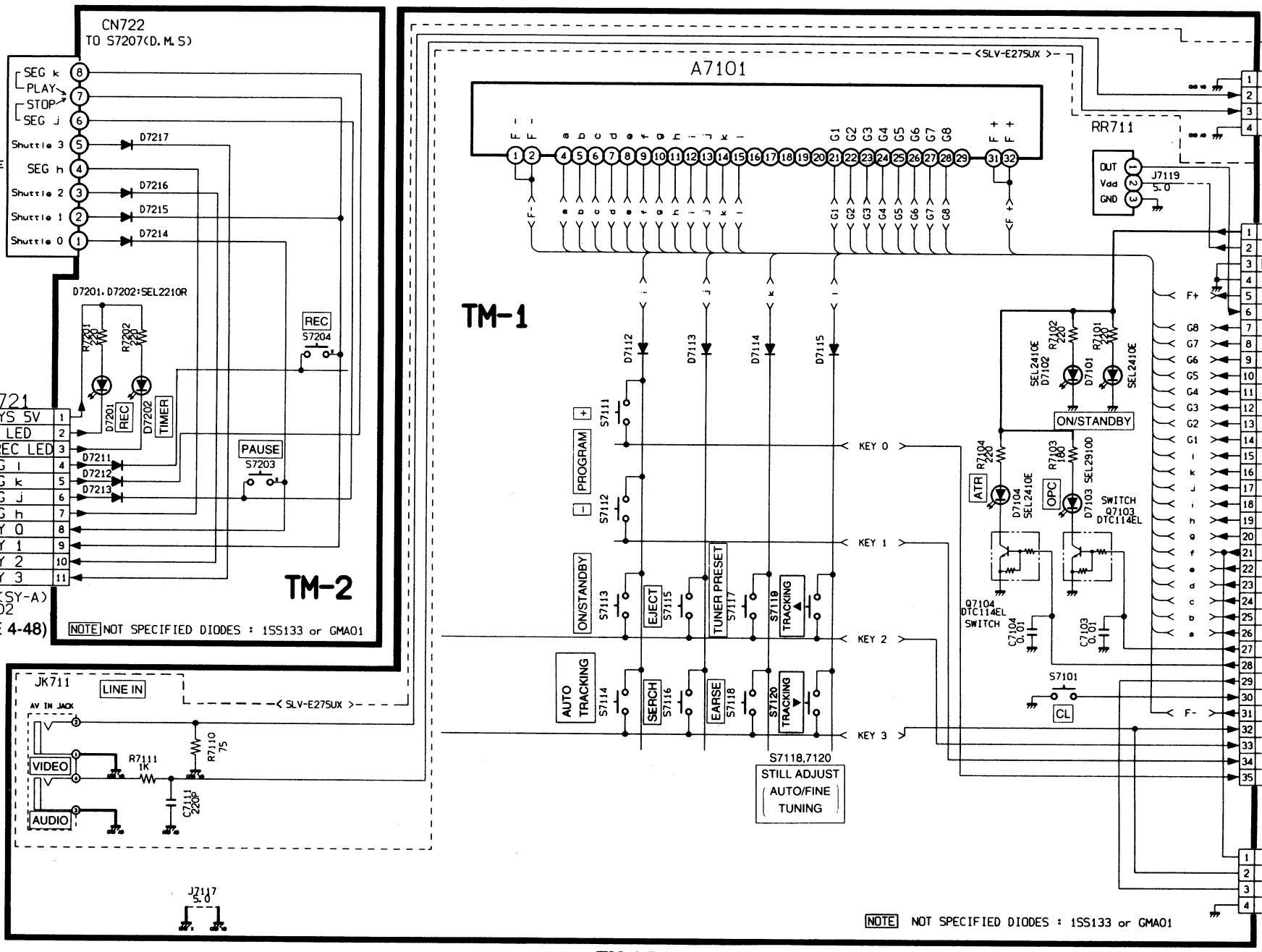
**10VP,**
**-E210UX,**
**V-E210EE)**
**es –**




**TM-2 BOARD SWITCH**
**(SLV-E275UX, SLV-E260VP & SLV-E260AP)**
– Ref. No.: TM-2 Board; 10,000 series –

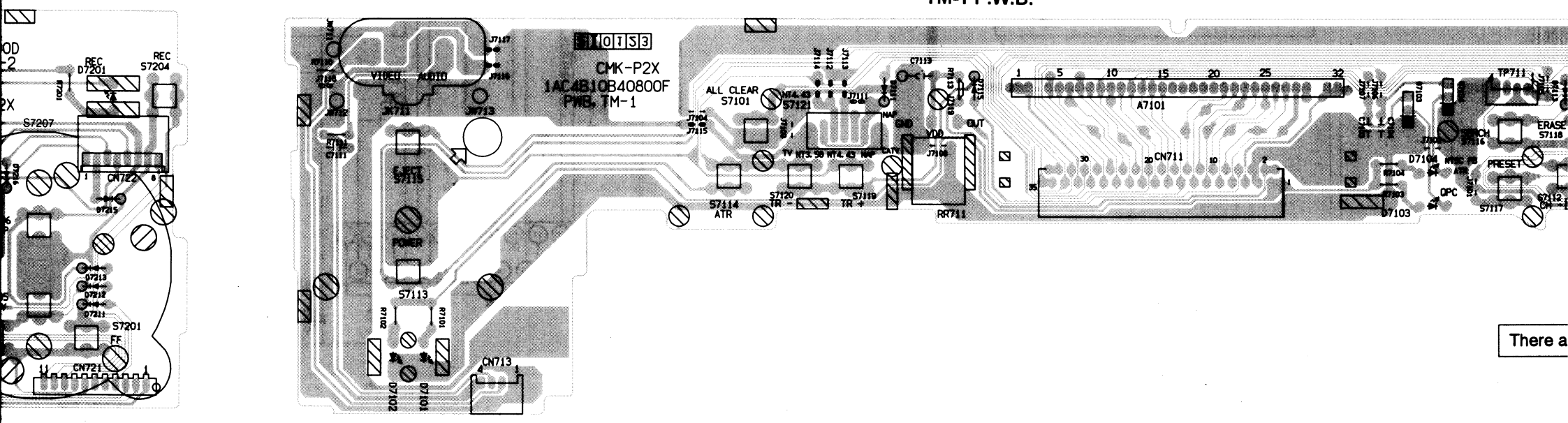


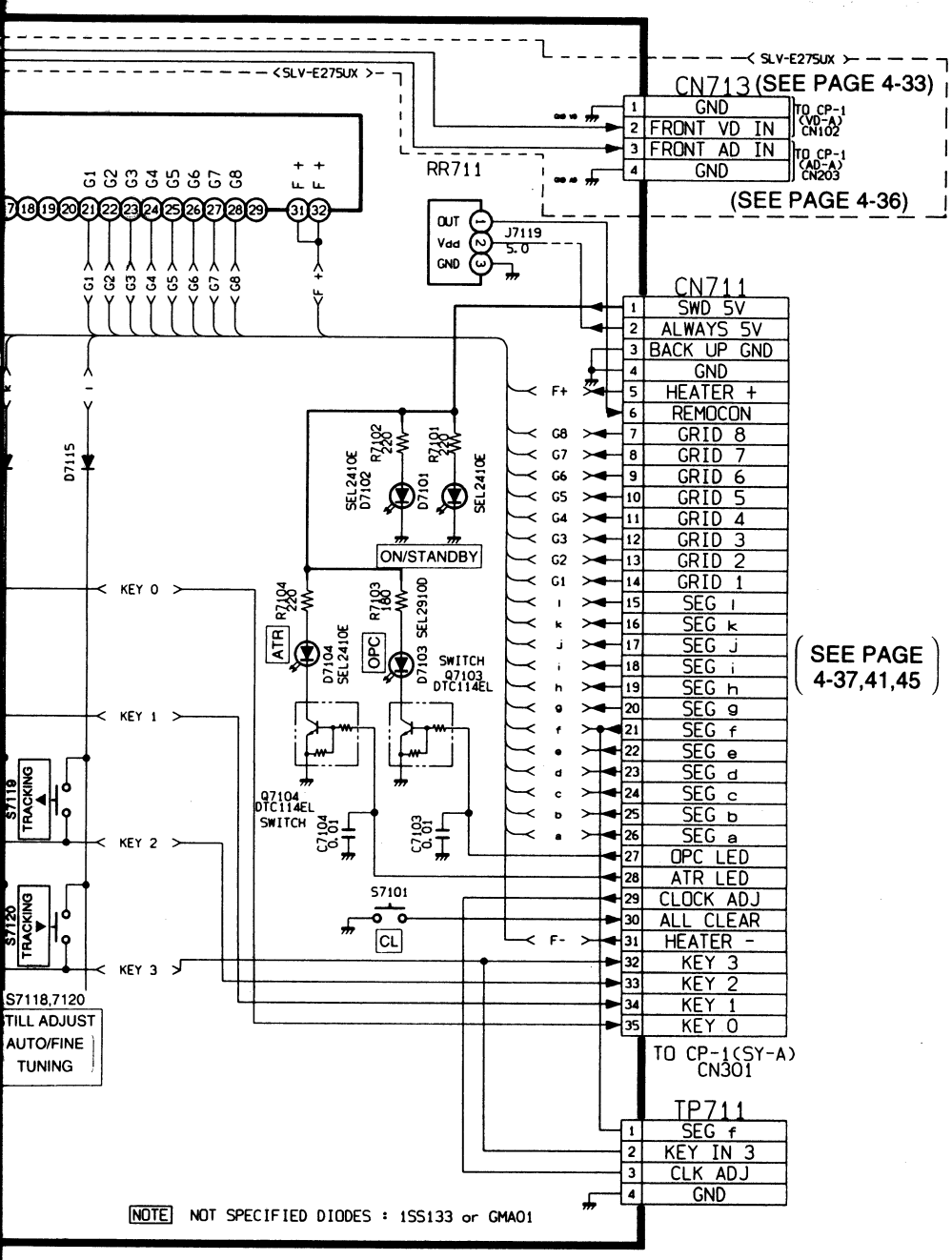

**TM-1 BOARD DISPLAY (FLD) & SWITCH**
– Ref. No.: TM-1 Board; 10,000 series –

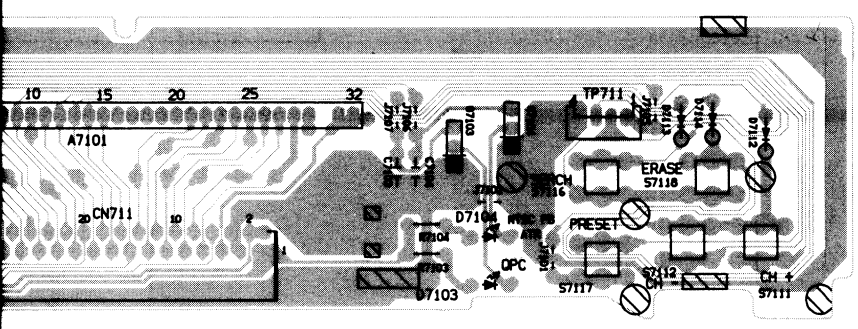



**P.W.B.**

**TM-1 P.W.B.**





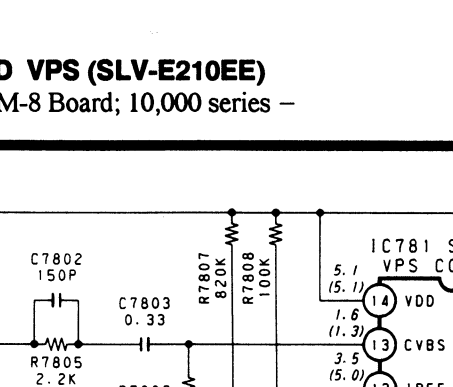

**TM-1 BOARD**

| | |
|---|---|
| CN711 | C-19 |
| CN713 | A-14 |
| D7101 | A-14 |
| D7102 | A-13 |
| D7103 | B-21 |
| D7104 | C-21 |
| D7112 | C-23 |
| D7113 | C-22 |
| D7114 | C-23 |
| D7115 | C-18 |
| Q7103 | C-21 |
| Q7104 | C-22 |

## TM-8 BOARD VPS (SLV-E210EE)

– Ref. No.: TM-8 Board; 10,000 series –

## TM-8 P.W.B. (SLV-E210EE)




There are few cases that the part isn't mounted in this model is printed on this diagram.

# SECTION 5
# REPAIR PARTS LIST

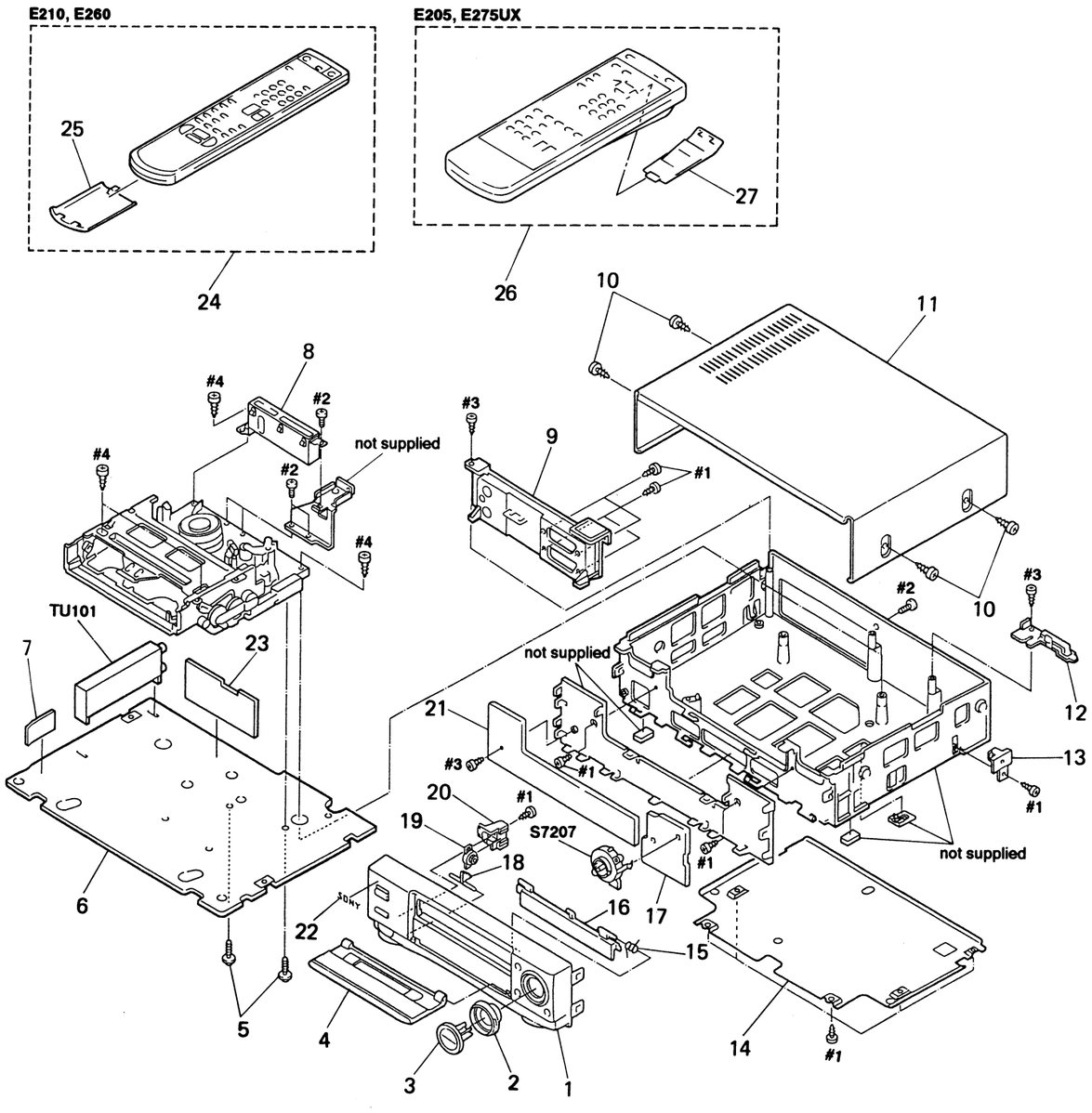
## 5-1. EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Abbreviation
  E205: E205EY/UY  E210: E210AE/CP/EE/UX/VP  E260: E260AP/VP
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

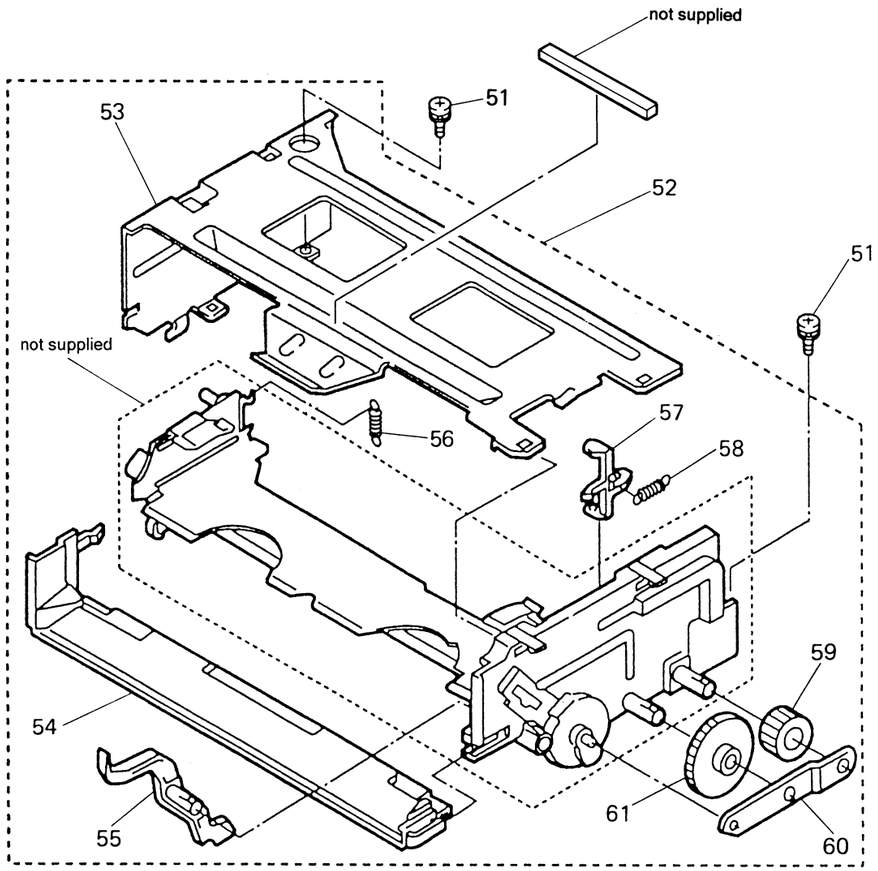
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

### 5-1-1. FRONT PANEL, CABINET ASSEMBLIES




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 1 | A-6780-323-A | CABINET ASSY, FRONT (E210) | |
| 1 | A-6780-342-A | CABINET ASSY, FRONT (E275UX) | |
| 1 | A-6780-351-A | CABINET ASSY, FRONT (E205) | |
| 1 | A-6780-364-A | CABINET ASSY, FRONT (E260) | |
| 2 | 3-957-856-11 | RING, SHUTTLE (E260, E275UX) | |
| 3 | A-6780-149-A | BUTTON BLOCK ASSY (E260, E275UX) | |
| 3 | A-6780-189-A | BUTTON BOARD, COMPLETE (E205, E210) | |
| 4 | A-6780-324-A | DOOR ASSY (E210AE/VP) | |
| 4 | A-6780-326-A | DOOR ASSY (E210CP) | |
| 4 | A-6780-343-A | DOOR ASSY (E275UX) | |
| 4 | A-6780-349-A | DOOR ASSY (E210UX) | |
| 4 | A-6780-352-A | DOOR ASSY (E205) | |
| 4 | A-6780-365-A | DOOR ASSY (E260) | |
| 4 | A-6780-377-A | DOOR ASSY (E210EE) | |
| 5 | 3-965-446-01 | SCREW, SPECIAL | |
| * 6 | A-6796-262-A | CP-1 BOARD, COMPLETE (E210VP) | |
| * 6 | A-6796-272-A | CP-1 BOARD, COMPLETE (E210CP) | |
| * 6 | A-6796-303-A | CP-1 BOARD, COMPLETE (E275UX) | |
| * 6 | A-6796-311-A | CP-1 BOARD, COMPLETE (E210AE) | |
| * 6 | A-6796-319-A | CP-1 BOARD, COMPLETE (E210UX) | |
| * 6 | A-6796-325-A | CP-1 BOARD, COMPLETE (E205UY) | |
| * 6 | A-6796-330-A | CP-1 BOARD, COMPLETE (E205EY) | |
| * 6 | A-6796-350-A | CP-1 BOARD, COMPLETE (E210EE) | |
| * 6 | A-6796-355-A | CP-1 BOARD, COMPLETE (E260) | |
| * 7 | A-6756-509-A | TM-8 BOARD, COMPLETE (E210EE) | |
| * 8 | A-6796-270-A | VP-1 BOARD, COMPLETE (E210) | |
| * 8 | A-6796-309-A | VP-1 BOARD, COMPLETE (E205, E260, E275UX) | |
| * 9 | 3-965-223-01 | BRACKET, TERMINAL (E205, E210UX, E275UX) | |
| * 9 | 3-968-720-01 | BRACKET, TERMINAL (E210AE/VP, E260) | |
| * 9 | 3-964-756-01 | BRACKET, TERMINAL (E210CP) | |
| * 9 | 3-969-910-01 | BRACKET, TERMINAL (E210EE) | |
| 10 | 3-740-382-01 | +BTS-B S 4X12 | |
| * 11 | 3-963-652-01 | COVER, TOP | |
| 12 | 3-963-641-01 | HOLDER (AC INLET) | |
| * 13 | 3-963-642-01 | TOP HOLDER COVER | |
| * 14 | 3-963-620-01 | COVER, BOTTOM | |
| 15 | 3-960-936-01 | SPRING | |
| 16 | 3-969-272-01 | DOOR, CASSETTE | |
| * 17 | A-6796-027-A | TM-2 BOARD, COMPLETE (E210AE, E260, E275UX) | |
| * 17 | A-6796-090-A | TM-2 BOARD, COMPLETE (E205, E210CP/EE/UX/VP) | |
| 18 | 3-963-623-01 | GEAR | |
| 19 | 3-964-333-01 | DAMPER | |
| * 20 | 3-963-624-01 | HOLDER | |
| * 21 | A-6796-026-A | TM-1 BOARD, COMPLETE (E275UX) | |
| * 21 | A-6796-052-A | TM-1 BOARD, COMPLETE (E205, E210, E260) | |
| 22 | 3-942-768-02 | EMBLEM (NO. 5), SONY | |
| * 23 | A-6796-074-A | TB-1 BOARD, COMPLETE (E210CP) | |
| 24 | 1-473-155-11 | REMOTE COMMANDER (RMT-V166) (E210CP/EE/VP) | |
| 24 | 1-473-155-21 | REMOTE COMMANDER (RMT-V166A) (E210AE/UX) | |
| 24 | 1-473-477-61 | REMOTE COMMANDER (RMT-V166J) (E260) | |
| 25 | 3-708-923-01 | COVER, BATTERY (V166, V166A, V166J) (E210, E260) | |
| 26 | 1-473-167-11 | REMOTE COMMANDER (RMT-V148P) (E205, E275UX) | |
| 27 | 3-943-535-01 | COVER, BATTERY (V148P) (E205, E275UX) | |
| S7207 | 1-572-662-11 | SWITCH, ROTARY (E210AE, E260, E275UX) | |
| ⚠TU101 | 1-693-295-11 | TUNER (RF/TU/IF) (E210CP) | |
| ⚠TU101 | 1-693-323-11 | TUNER (RF/TU/IF) (E205EY) | |
| ⚠TU101 | 1-693-331-11 | TUNER (RF/TU/IF) (E210AE/VP, E260) | |
| ⚠TU101 | 1-693-334-11 | TUNER (RF/TU/IF) (E205UY, E210UX, E275UX) | |
| ⚠TU101 | 1-693-341-11 | TUNER (RF/TU/IF) (E210EE) | |

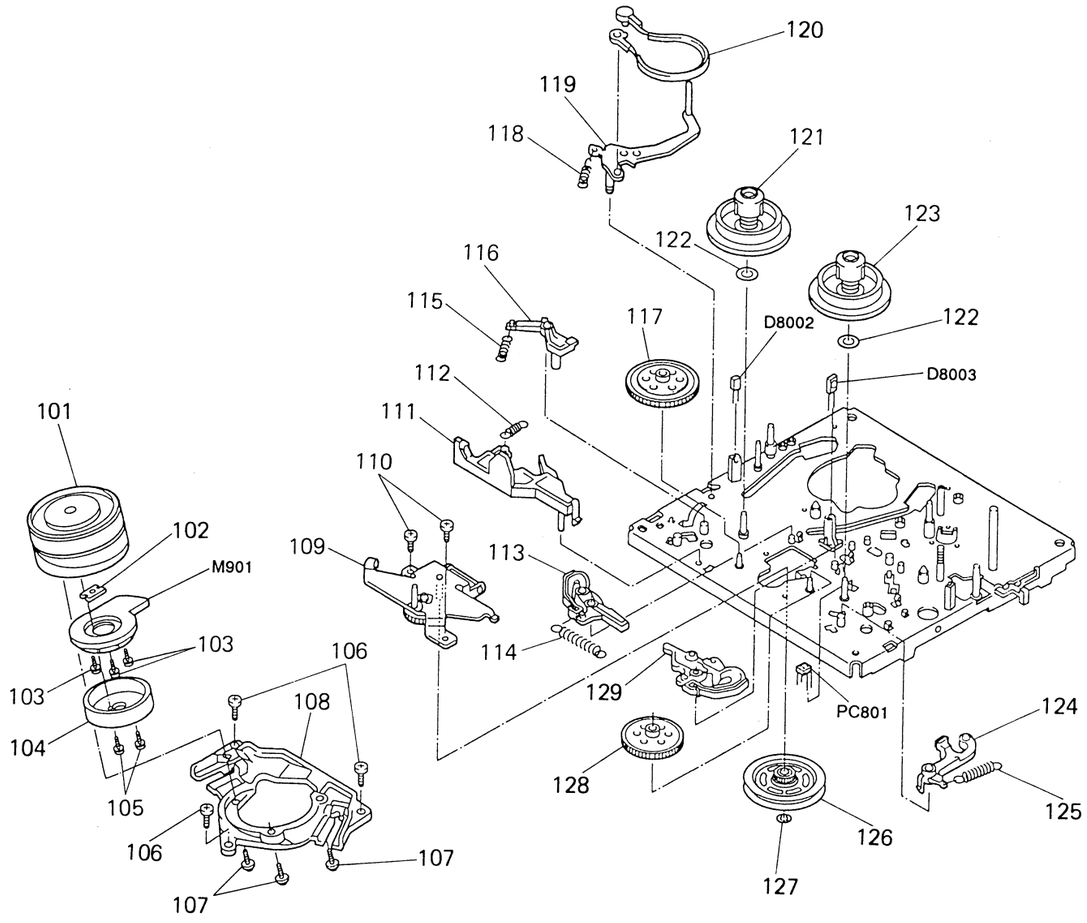
## 5-1-2. CASSETTE MECHANICAL ASSEMBLY




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 51 | 3-960-939-01 | SCREW (2.6X6), SPECIAL | |
| * 52 | A-6779-276-A | MECHANICAL ASSY, CASSETTE | |
| * 53 | 3-960-952-01 | STAND (L) | |
| 54 | 3-960-954-01 | FRAME, UNDER | |
| 55 | 3-960-915-01 | LEVER, DOOR OPENER | |
| 56 | 3-961-303-01 | SPRING, LOCK TRAY | |
| 57 | 3-961-302-01 | LEVER, RELEASE | |
| 58 | 3-961-301-01 | SPRING, LID OPENER | |
| 59 | 3-960-960-01 | GEAR, PINION | |
| * 60 | 3-960-916-01 | HOLDER, GEAR | |
| 61 | 3-960-959-01 | GEAR, LOCK | |

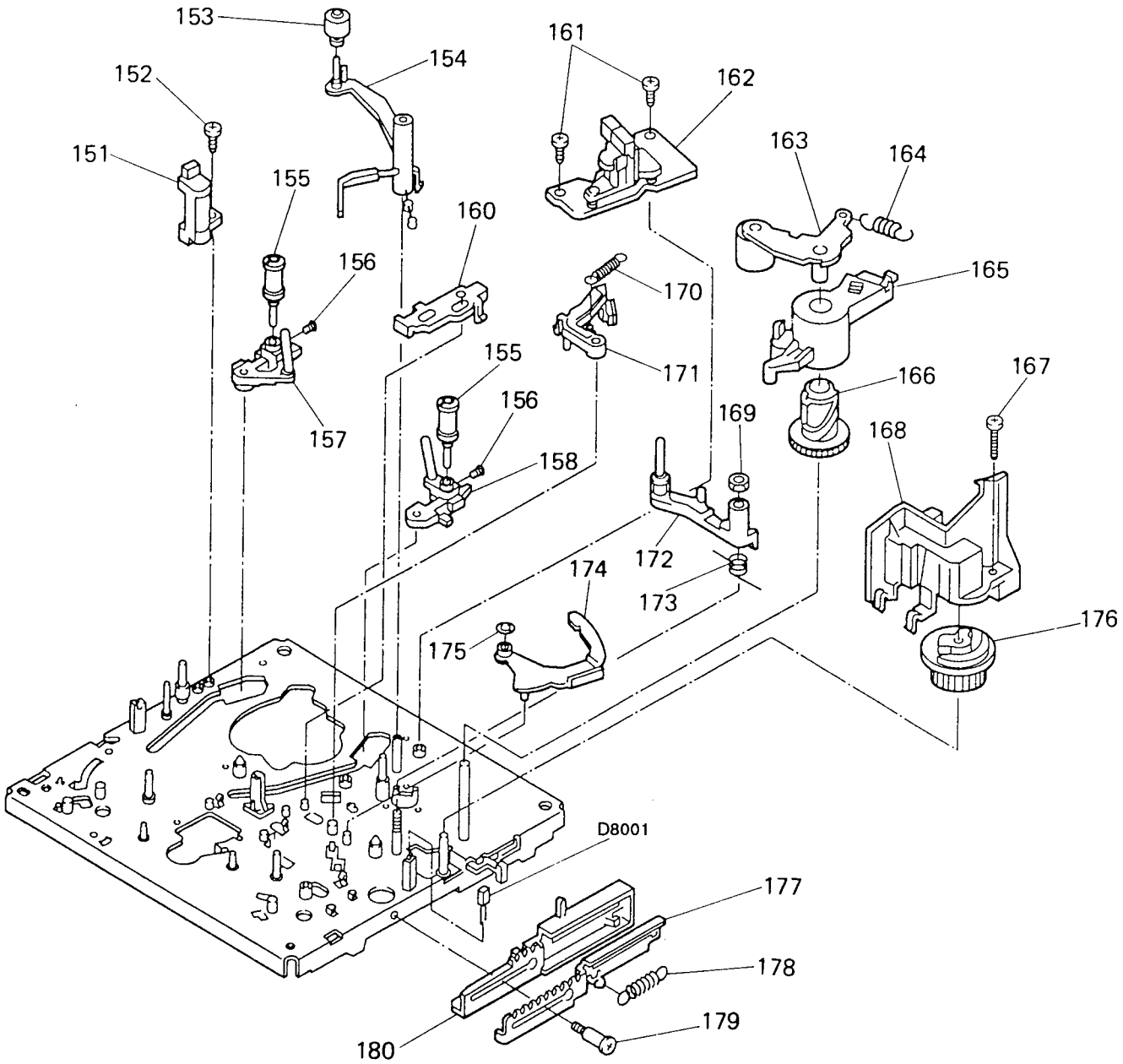


## 5-1-3. MECHANISM CHASSIS ASSEMBLY (1)



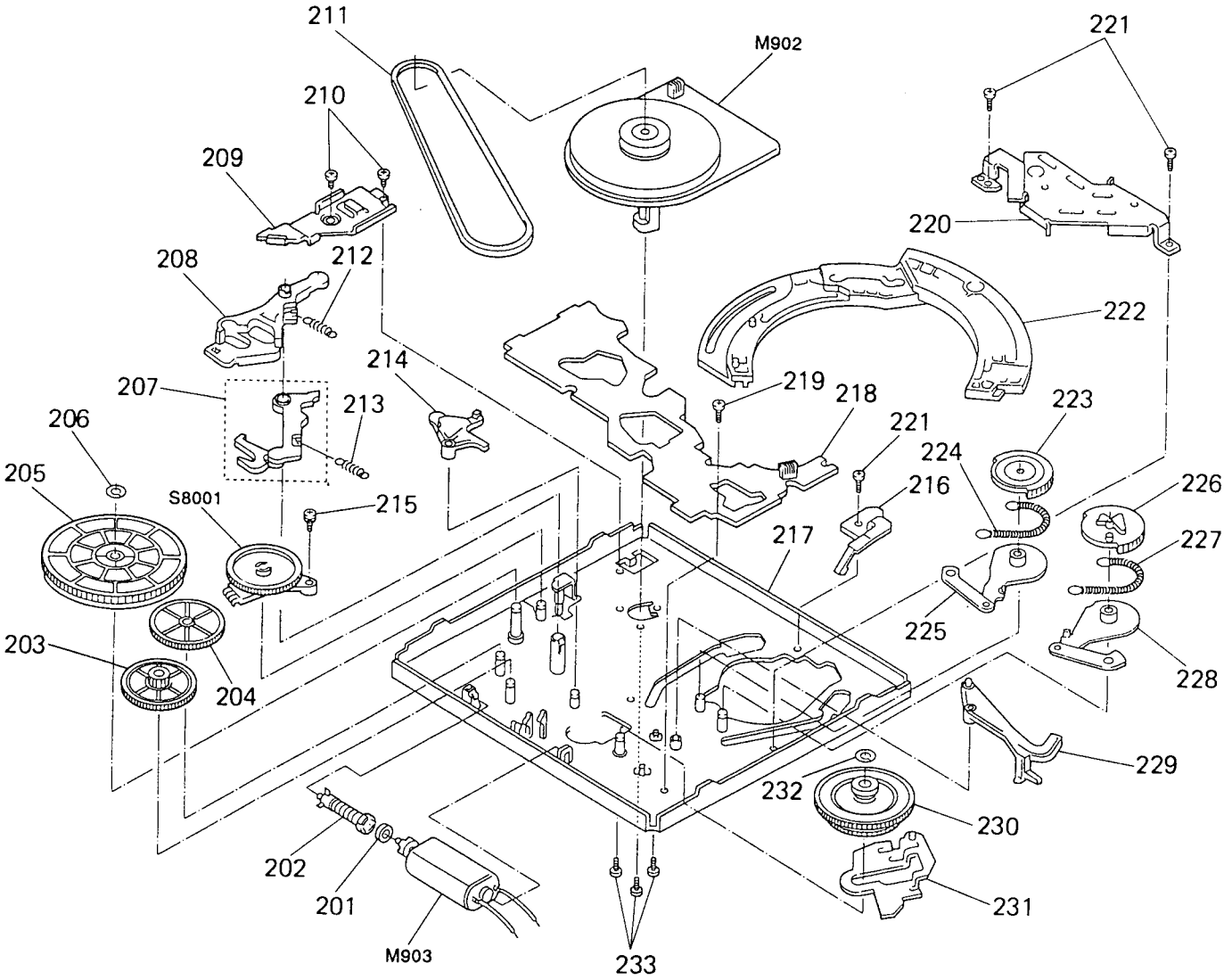

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 101 | A-6751-748-A | CYLINDER COMPLETE ASSY (E210) | |
| 101 | A-6762-507-A | CYLINDER COMPLETE ASSY (E205, E260, E275) | |
| 102 | 3-735-738-01 | SPACER, MOTOR | |
| 103 | 3-963-800-01 | SCREW (2.3X10) | |
| * 104 | 1-461-017-11 | ROTOR | |
| 105 | 3-963-799-01 | SCREW (2.3X6) | |
| 106 | 3-961-033-01 | SCREW (2.6X8), SPECIAL | |
| 107 | 3-963-798-01 | SCREW (2.6X7) | |
| 108 | 3-965-448-01 | MOUNT, CYLINDER | |
| 109 | A-6782-359-A | CLUTCH BOARD, COMPLETE | |
| 110 | 3-960-925-01 | SCREW (2.6X4), SPECIAL | |
| 111 | 3-961-022-01 | LEVER, EP SWITCH | |
| 112 | 3-961-023-01 | SPRING, EP SWITCH | |
| 113 | 3-963-785-01 | BRAKE (ASSY), S | |
| 114 | 3-966-765-01 | SPRING, BRAKE | |
| 115 | 3-961-003-01 | SPRING, S SOFT | |
| 116 | 3-961-002-01 | LEVER, S SOFT | |
| 117 | 3-960-927-01 | GEAR, S REEL | |
| 118 | 3-960-977-01 | SPRING, BT | |
| 119 | 3-961-016-01 | LEVER ASSY, BT | |
| 120 | 3-963-789-01 | BAND (ASSY), BRAKE | |
| 121 | 3-963-781-01 | REEL (ASSY), SUPPLY | |
| 122 | 3-735-754-01 | WASHER (DIA.3), ADJUSTMENT | |
| 123 | 3-963-782-01 | REEL (ASSY), TAKE UP | |
| 124 | 3-963-784-01 | BRAKE (ASSY), SOFT | |
| 125 | 3-961-001-01 | SPRING, T SOFT | |
| 126 | 3-960-926-01 | PULLEY, REEL | |
| 127 | 3-948-603-01 | WASHER, SPECIAL | |
| 128 | 3-960-928-01 | GEAR, T REEL | |
| 129 | 3-963-786-01 | BRAKE (ASSY), T | |
| D8002 | 1-810-691-11 | PHOTO DIODE PN263L-NC (TAPE END SENSOR) | |
| D8003 | 1-810-690-11 | LED LN59L | |
| M901 | 1-411-291-11 | STATOR (MOTOR CYL) DC 2W (DRUM HEAD) | |
| PC801 | 1-810-692-11 | PHOTO DIODE ON2170-R (REEL T SENSOR) | |

## 5-1-4. MECHANISM CHASSIS ASSEMBLY (2)




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 151 | 3-963-790-01 | HEAD, FULL ERASE | |
| 152 | 3-960-984-01 | SCREW (2.6X10), SPECIAL | |
| 153 | 3-960-975-01 | ROLLER ASSY, CLEANER | |
| 154 | 3-964-887-01 | LEVER, CLEANER | |
| 155 | 3-735-630-01 | ROLLER ASSY, GUIDE | |
| 156 | 3-961-038-01 | SCREW (2X3), SPECIAL | |
| 157 | 3-961-037-01 | MOUNT ASSY, S INC LINE | |
| 158 | 3-961-039-01 | MOUNT ASSY, T INC LINE | |
| 160 | 3-961-008-01 | SLIDE, T ACT BRAKE | |
| 161 | 3-966-763-01 | SCREW (2.6X12) | |
| 162 | 3-963-791-01 | HEAD (ASSY), R/P ACE | |
| 163 | 3-961-024-01 | LEVER ASSY, PINCH ROLLER | |
| 164 | 3-961-026-01 | SPRING, PINCH ROLLER | |
| 165 | 3-961-025-01 | PINCH MOUNT, LIFT | |
| 166 | 3-961-027-01 | CAM, LIFT PINCH | |
| 167 | 3-961-030-01 | SCREW (2.6X16), SPECIAL | |
| 168 | 3-961-029-01 | OPENER MOUNT | |
| 169 | 3-961-045-01 | NUT (3X3), SPECIAL | |
| 170 | 3-961-015-01 | SPRING, CAPSTAN BRAKE | |
| 171 | 3-961-014-01 | BRAKE ASSY, CAPSTAN | |
| 172 | 3-966-764-01 | LEVER ASSY, ROAD | |
| 173 | 3-961-044-01 | SPRING, L GUIDE LEVER | |
| 174 | 3-964-886-01 | LEVER (ASSY), ACT L GUIDE | |
| 175 | 3-740-367-01 | WASHER, SLIT | |
| 176 | 3-961-028-01 | GEAR, CAM PINCH | |
| 177 | 3-961-306-01 | GEAR, START RACK | |
| 178 | 3-961-307-01 | SPRING, FRONT RACK | |
| 179 | 3-961-021-01 | SCREW (2.6X6), SPECIAL | |
| 180 | 3-961-305-01 | GEAR, FRONT RACK | |
| D8001 | 1-810-691-11 | PHOTO DIODE PN263L-NC (TAPE TOP SENSOR) | |

## 5-1-5. MECHANISM CHASSIS ASSEMBLY (3)




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 201 | 3-961-049-01 | DAMPER | |
| 202 | 3-961-048-01 | GEAR (COMPL), WORM | |
| 203 | 3-961-050-01 | GEAR (1), WHEEL | |
| 204 | 3-963-793-01 | GEAR (2), WHEEL | |
| 205 | 3-963-794-01 | CAM, MAIN | |
| 206 | 3-961-053-01 | WASHER (3.6X0.5), SPECIAL | |
| 207 | 3-963-788-01 | BAR (ASSY), ACT BRAKE LEVER | |
| 208 | 3-963-787-01 | LEVER, CONTROL BRAKE | |
| 209 | 3-961-152-01 | HARNESS MOUNT | |
| 210 | 3-960-919-01 | SCREW (2.6X3), SPECIAL | |
| 211 | 3-960-929-01 | BELT, REEL | |
| 212 | 3-961-013-01 | SPRING, CLUTCH CHANGE | |
| 213 | 3-961-011-01 | SPRING, BRAKE RETURN | |
| 214 | 3-961-012-01 | LEVER, CLUTCH CHANGE | |
| 215 | 3-961-034-01 | SCREW (2.6X8), SPECIAL | |
| 216 | 3-960-920-01 | GROUND ASSY, CYL | |
| * 217 | 3-963-779-01 | CHASSIS (ASSY) | |
| * 218 | A-6796-028-A | MC-1 BOARD, COMPLETE | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 219 | 3-960-925-01 | SCREW (2.6X4), SPECIAL | |
| 220 | 3-963-796-01 | MOUNT, CRESCENT | |
| 221 | 3-960-921-01 | SCREW (2.6X6), SPECIAL | |
| * 222 | 3-963-795-01 | SLIDE, CRESCENT | |
| 223 | 3-960-998-01 | GEAR, T ROAD | |
| 224 | 3-961-035-01 | SPRING, T ROAD | |
| 225 | 3-961-036-01 | LEVER ASSY, T ROAD | |
| 226 | 3-960-995-01 | GEAR, S ROAD | |
| 227 | 3-960-996-01 | SPRING, S ROAD | |
| 228 | 3-960-997-01 | LEVER ASSY, S ROAD | |
| 229 | 3-960-982-01 | LEVER ASSY, BT SPRING | |
| 230 | 3-963-783-01 | GEAR (ASSY), FRICTION | |
| 231 | 3-961-007-01 | SLIDE, S ACT BRAKE | |
| 232 | 3-735-755-01 | WASHER (DIA.2.6) | |
| 233 | 3-961-032-01 | SCREW (2.6X6), SPECIAL | |
| M902 | 1-698-579-11 | MOTOR, CAPSTAN DC 3W | |
| M903 | 3-961-047-01 | MOTOR ASSY, LOADING | |
| S8001 | 3-963-780-01 | SWITCH (P-IT), MODE | |

## 5-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Abbreviation
  E205:E205EY/UY E210:E210AE/CP/EE/UX/VP E260:E260AP/VP
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| * | A-6796-330-A | CP-1 BOARD, COMPLETE (E205EY) | | | |
| * | A-6796-325-A | CP-1 BOARD, COMPLETE (E205UY) | | | |
| * | A-6796-311-A | CP-1 BOARD, COMPLETE (E210AE) | | | |
| * | A-6796-272-A | CP-1 BOARD, COMPLETE (E210CP) | | | |
| * | A-6796-350-A | CP-1 BOARD, COMPLETE (E210EE) | | | |
| * | A-6796-319-A | CP-1 BOARD, COMPLETE (E210UX) | | | |
| * | A-6796-262-A | CP-1 BOARD, COMPLETE (E210VP) | | | |
| * | A-6796-355-A | CP-1 BOARD, COMPLETE (E260) | | | |
| * | A-6796-303-A | CP-1 BOARD, COMPLETE (E275UX) | | | |
| | | ********** | | | |
| | | (Ref. No. 10. 000 Series) | | | |
| | 1-533-583-11 | HOLDER, FUSE | | | |
| | 7-685-646-79 | SCREW +BVTP 3X8 TYPE2 N-S | | | |
| | | < CAPACITOR > | | | |
| C1001 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1002 | 1-162-219-31 | CERAMIC | 68PF | 5% | 50V |
| C1004 | 1-162-211-31 | CERAMIC | 33PF | 5% | 50V |
| C1006 | 1-162-211-31 | CERAMIC | 33PF | 5% | 50V |
| C1007 | 1-164-060-11 | CERAMIC | 39PF | 5% | 50V |
| C1008 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1009 | 1-162-292-31 | CERAMIC | 680PF | 10% | 50V |
| C1010 | 1-162-219-31 | CERAMIC | 68PF | 5% | 50V |
| C1021 | 1-162-195-31 | CERAMIC | 4. 7PF | 10% | 50V |
| C1022 | 1-162-289-31 | CERAMIC | 390PF | 10% | 50V |
| C1023 | 1-162-199-31 | CERAMIC | 10PF | 5% | 50V |
| | | | | (E205, E260, E275UX) | |
| C1024 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1025 | 1-124-234-00 | ELECT | 22uF | 20% | 16V |
| C1026 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1027 | 1-161-063-00 | CERAMIC | 0. 1uF | 10% | 50V |
| C1028 | 1-126-154-11 | ELECT | 47uF | 20% | 6. 3V |
| C1030 | 1-124-667-11 | ELECT | 10uF | 20% | 100V |
| | | | | (E205, E210, E275UX) | |
| C1030 | 1-111-241-11 | ELECT | 10uF | 20% | 16V |
| | | | | | (E260) |
| C1031 | 1-124-667-11 | ELECT | 10uF | 20% | 100V |
| | | | | (E205, E210, E275UX) | |
| C1031 | 1-111-241-11 | ELECT | 10uF | 20% | 16V |
| | | | | | (E260) |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C1032 | 1-126-301-11 | ELECT | 1uF | 20% | 50V |
| C1033 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1035 | 1-161-021-11 | CERAMIC | 0. 047uF | 10% | 25V |
| C1036 | 1-126-301-11 | ELECT | 1uF | 20% | 50V |
| C1037 | 1-126-154-11 | ELECT | 47uF | 20% | 6. 3V |
| C1038 | 1-161-063-00 | CERAMIC | 0. 1uF | 10% | 50V |
| C1040 | 1-126-301-11 | ELECT | 1uF | 20% | 50V |
| C1042 | 1-126-301-11 | ELECT | 1uF | 20% | 50V |
| C1043 | 1-161-494-11 | CERAMIC | 0. 022uF | 30% | 25V |
| C1044 | 1-161-021-11 | CERAMIC | 0. 047uF | 10% | 25V |
| C1045 | 1-161-772-11 | CERAMIC | 0. 1uF | 10% | 25V |
| C1046 | 1-124-667-11 | ELECT | 10uF | 20% | 100V |
| | | | | (E205, E210, E275UX) | |
| C1046 | 1-111-241-11 | ELECT | 10uF | 20% | 16V |
| | | | | | (E260) |
| C1047 | 1-109-889-11 | ELECT | 1uF | 20% | 50V |
| C1051 | 1-162-285-31 | CERAMIC | 180PF | 10% | 50V |
| C1052 | 1-162-211-31 | CERAMIC | 33PF | 5% | 50V |
| C1053 | 1-101-880-00 | CERAMIC | 47PF | 5% | 50V |
| C1065 | 1-161-021-11 | CERAMIC | 0. 047uF | 10% | 25V |
| C1066 | 1-126-154-11 | ELECT | 47uF | 20% | 6. 3V |
| C1075 | 1-161-494-11 | CERAMIC | 0. 022uF | 30% | 25V |
| C1081 | 1-161-063-00 | CERAMIC | 0. 1uF | 10% | 50V |
| C1082 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1101 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1102 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1103 | 1-126-154-11 | ELECT | 47uF | 20% | 6. 3V |
| C1104 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1105 | 1-126-301-11 | ELECT | 1uF | 20% | 50V |
| C1106 | 1-126-301-11 | ELECT | 1uF | 20% | 50V |
| C1107 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1108 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1110 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1111 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1113 | 1-124-438-00 | ELECT | 1uF | 20% | 50V |
| C1115 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1116 | 1-164-079-11 | CERAMIC | 330PF | 10% | 50V |
| C1119 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |

## CP-1

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C1121 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V (E210EE) |
| C1122 | 1-161-057-00 | CERAMIC | 0.033uF | 10% | 50V (E210EE) |
| C1123 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V (E210EE) |
| C1124 | 1-126-154-11 | ELECT | 47uF | 20% | 6.3V (E210EE) |
| C1125 | 1-161-063-00 | CERAMIC | 0.1uF | 10% | 50V (E210EE) |
| C1126 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V (E210EE) |
| C1131 | 1-124-465-00 | ELECT | 0.47uF | 20% | 50V (E205, E210AE/EE/UX/VP, E260, E275UX) |
| C1132 | 1-124-667-11 | ELECT | 10uF | 20% | 100V (E275UX) |
| C1133 | 1-124-667-11 | ELECT | 10uF | 20% | 100V (E205, E210AE/EE/UX/VP, E275UX) |
| C1133 | 1-111-241-11 | ELECT | 10uF | 20% | 16V (E260) |
| C1134 | 1-161-021-11 | CERAMIC | 0.047uF | 10% | 25V (E205, E210AE/EE/UX/VP, E260, E275UX) |
| C1135 | 1-164-073-11 | CERAMIC | 100PF | 10% | 50V (E275UX) |
| C1201 | 1-124-472-11 | ELECT | 470uF | 20% | 10V (E205, E210AE/EE/UX/VP, E275UX) |
| C1201 | 1-126-935-11 | ELECT | 470uF | 20% | 6.3V (E260) |
| C1202 | 1-161-063-00 | CERAMIC | 0.1uF | 10% | 50V |
| C1211 | 1-162-211-31 | CERAMIC | 33PF | 5% | 50V |
| C1713 | 1-162-203-31 | CERAMIC | 15PF | 5% | 50V |
| C1714 | 1-162-203-31 | CERAMIC | 15PF | 5% | 50V |
| C1715 | 1-126-301-11 | ELECT | 1uF | 20% | 50V |
| C1716 | 1-126-154-11 | ELECT | 47uF | 20% | 6.3V |
| C1717 | 1-161-040-00 | CERAMIC | 0.0012uF | 10% | 25V |
| C1718 | 1-126-301-11 | ELECT | 1uF | 20% | 50V |
| C1720 | 1-162-305-11 | CERAMIC | 0.0068uF | 20% | 16V |
| C1721 | 1-109-889-11 | ELECT | 1uF | 20% | 50V |
| C1722 | 1-161-494-11 | CERAMIC | 0.022uF | 30% | 25V |
| C1723 | 1-162-208-31 | CERAMIC | 24PF | 5% | 50V |
| C1724 | 1-162-199-31 | CERAMIC | 10PF | 5% | 50V |
| C1725 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C2002 | 1-162-293-31 | CERAMIC | 820PF | 10% | 50V |
| C2004 | 1-126-154-11 | ELECT | 47uF | 20% | 6.3V |
| C2005 | 1-161-054-00 | CERAMIC | 0.018uF | 10% | 25V |
| C2009 | 1-124-234-00 | ELECT | 22uF | 20% | 16V |
| C2010 | 1-124-589-11 | ELECT | 47uF | 20% | 16V |
| C2013 | 1-161-053-00 | CERAMIC | 0.015uF | 10% | 50V |
| C2016 | 1-124-259-11 | ELECT | 4.7uF | 20% | 50V |
| C2017 | 1-124-667-11 | ELECT | 10uF | 20% | 100V |
| C2019 | 1-124-589-11 | ELECT | 47uF | 20% | 16V |
| C2020 | 1-164-077-11 | CERAMIC | 220PF | 10% | 50V |
| C2021 | 1-110-363-11 | CAPACITOR | 0.0068uF | | |
| C2022 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C2024 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C2031 | 1-161-063-00 | CERAMIC | 0.1uF | 10% | 50V |
| C2032 | 1-161-063-00 | CERAMIC | 0.1uF | 10% | 50V |
| C2071 | 1-164-086-11 | CERAMIC | 0.0012uF | 20% | 50V (E205, E260, E275UX) |
| C2072 | 1-124-257-00 | ELECT | 2.2uF | 20% | 50V (E205, E260, E275UX) |
| C2073 | 1-161-056-00 | CERAMIC | 0.027uF | 10% | 25V |
| C2091 | 1-161-063-00 | CERAMIC | 0.1uF | 10% | 50V |
| C2092 | 1-162-302-11 | CERAMIC | 0.0022uF | 20% | 16V |
| C2107 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V (E205, E210AE/EE/UX/VP, E260, E275UX) |
| C2109 | 1-161-329-00 | CERAMIC | 0.0068uF | 30% | 25V (E205, E210AE/EE/UX/VP, E260, E275UX) |
| C3001 | 1-162-206-31 | CERAMIC | 20PF | 5% | 50V |
| C3002 | 1-162-207-31 | CERAMIC | 22PF | 5% | 50V |
| C3004 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C3005 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C3008 | 1-126-154-11 | ELECT | 47uF | 20% | 6.3V |
| C3009 | 1-161-063-00 | CERAMIC | 0.1uF | 10% | 50V |
| C3010 | 1-124-257-00 | ELECT | 2.2uF | 20% | 50V |
| C3011 | 1-161-063-00 | CERAMIC | 0.1uF | 10% | 50V |
| C3014 | 1-124-472-11 | ELECT | 470uF | 20% | 10V (E205, E210, E275UX) |
| C3014 | 1-126-935-11 | ELECT | 470uF | 20% | 6.3V (E260) |
| C3016 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C3017 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V (E205UY, E210CP/EE/UX, E275UX) |
| C3021 | 1-101-880-00 | CERAMIC | 47PF | 5% | 50V |
| C3034 | 1-161-063-00 | CERAMIC | 0.1uF | 10% | 50V |
| C3042 | 1-115-437-11 | CAPACITOR | 0.1uF | | 5.5V |
| C3072 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C3073 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C3088 | 1-162-205-31 | CERAMIC | 18PF | 5% | 50V |
| C3093 | 1-124-667-11 | ELECT | 10uF | 20% | 100V (E205, E210, E275UX) |
| C3093 | 1-111-241-11 | ELECT | 10uF | 20% | 16V (E260) |
| C3094 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C3501 | 1-161-053-00 | CERAMIC | 0.015uF | 10% | 50V |
| C3502 | 1-161-329-00 | CERAMIC | 0.0068uF | 30% | 25V |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C3503 | 1-161-053-00 | CERAMIC | 0.015uF | 10% | 50V |
| C3504 | 1-124-234-00 | ELECT | 22uF | 20% | 16V |
| C3505 | 1-124-234-00 | ELECT | 22uF | 20% | 16V |
| C3506 | 1-161-329-00 | CERAMIC | 0.0068uF | 30% | 25V |
| C3507 | 1-124-234-00 | ELECT | 22uF | 20% | 16V |
| C3508 | 1-124-234-00 | ELECT | 22uF | 20% | 16V |
| C3509 | 1-126-154-11 | ELECT | 47uF | 20% | 6.3V |
| C3510 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C3511 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V |
| C3513 | 1-161-061-11 | CERAMIC | 0.068uF | 10% | 50V |
| C3514 | 1-136-167-00 | FILM | 0.15uF | 5% | 50V |
| C3515 | 1-130-487-00 | MYLAR | 0.022uF | 5% | 50V |
| C3516 | 1-162-302-11 | CERAMIC | 0.0022uF | 20% | 16V |
| C3517 | 1-162-301-11 | CERAMIC | 0.0015uF | 20% | 16V |
| C3522 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C3523 | 1-126-301-11 | ELECT | 1uF | 20% | 50V |
| C3524 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C3525 | 1-124-465-00 | ELECT | 0.47uF | 20% | 50V |
| C3526 | 1-161-024-00 | CERAMIC | 0.082uF | 10% | 25V |
| C3530 | 1-126-154-11 | ELECT | 47uF | 20% | 6.3V |
| C3536 | 1-126-155-11 | ELECT | 100uF | 20% | 6.3V |
| C3540 | 1-164-073-11 | CERAMIC | 100PF | 10% | 50V |
| C3551 | 1-136-166-00 | FILM | 0.12uF | 5% | 50V |
| C3552 | 1-164-064-11 | CERAMIC | 56PF | 5% | 50V |
| C3553 | 1-126-301-11 | ELECT | 1uF | 20% | 50V |
| C3554 | 1-162-284-31 | CERAMIC | 150PF | 10% | 50V |
| C3555 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C3556 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C3558 | 1-124-229-00 | ELECT | 33uF | 20% | 10V |
| C3561 | 1-130-490-11 | MYLAR | 0.039uF | 5% | 50V |
| C3570 | 1-161-063-00 | CERAMIC | 0.1uF | 10% | 50V |
| C3571 | 1-161-063-00 | CERAMIC | 0.1uF | 10% | 50V |
| ⚠C5001 | 1-136-188-11 | FILM | 0.068uF | 5% | 250V |
| ⚠C5002 | 1-136-188-11 | FILM | 0.068uF | 5% | 250V |
| ⚠C5005 | 1-161-741-00 | CERAMIC | 0.001uF | 10% | 250V |
| ⚠C5007 | 1-115-385-11 | CERAMIC | 2200PF | 20% | 250V |
| C5010 | 1-125-554-11 | ELECT | 47uF | 20% | 400V |
| C5011 | 1-124-257-00 | ELECT | 2.2uF | 20% | 50V |
| C5015 | 1-161-772-11 | CERAMIC | 0.1uF | 10% | 25V |
| C5017 | 1-164-080-11 | CERAMIC | 390PF | 10% | 50V |
| C5020 | 1-115-678-11 | CAPACITOR | 47P | | 1KV |
| C5021 | 1-110-973-11 | CAPACITOR | 0.0022uF | | 500V |
| C5101 | 1-124-525-11 | ELECT | 1000uF | 20% | 25V |
| C5102 | 1-126-168-11 | ELECT | 1000uF | 20% | 6.3V |
| C5103 | 1-111-063-11 | ELECT | 470uF | 20% | 25V |
| C5104 | 1-124-525-11 | ELECT | 1000uF | 20% | 25V |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C5105 | 1-126-804-11 | ELECT | 100uF | 20% | 50V |
| C5106 | 1-126-967-11 | ELECT | 47uF | 20% | 35V |
| C5107 | 1-126-176-11 | ELECT | 220uF | 20% | 10V |
| C5111 | 1-124-455-00 | ELECT | 100uF | 20% | 16V |
| C5112 | 1-124-667-11 | ELECT | 10uF | 20% | 100V |
| C5114 | 1-124-667-11 | ELECT | 10uF | 20% | 100V |
| C5115 | 1-126-162-11 | ELECT | 3.3uF | 20% | 50V |
| C5116 | 1-124-667-11 | ELECT | 10uF | 20% | 100V |
| C5121 | 1-165-171-11 | CAPACITOR | 220PF | | 500V |
| C5124 | 1-124-464-11 | ELECT | 0.22uF | 20% | 50V |
| C5135 | 1-136-163-00 | FILM | 0.068uF | 5% | 50V |
| C6001 | 1-124-259-11 | ELECT | 4.7uF | 20% | 50V (E210CP, EE) |
| C6003 | 1-124-257-00 | ELECT | 2.2uF | 20% | 50V (E210CP, EE) |
| C6004 | 1-161-063-00 | CERAMIC | 0.1uF | 10% | 50V (E205UY, E210CP/EE/UX, E275UX) |
| C6005 | 1-161-063-00 | CERAMIC | 0.1uF | 10% | 50V (E205UY, E210CP/EE/UX, E275UX) |
| C6007 | 1-124-667-11 | ELECT | 10uF | 20% | 100V |
| C6008 | 1-161-057-00 | CERAMIC | 0.033uF | 10% | 50V |
| C6009 | 1-124-589-11 | ELECT | 47uF | 20% | 16V (E205, E210CP/EE/UX, E275UX) |
| C6009 | 1-124-525-11 | ELECT | 1000uF | 20% | 25V (E210AE/VP, E260) |
| C6010 | 1-161-375-00 | CERAMIC | 0.0022uF | 20% | 50V (E205UY, E210CP/EE/UX, E275UX) |
| C6010 | 1-164-080-11 | CERAMIC | 390PF | 10% | 50V (E205EY, E210AE/VP, E260) |
| C6013 | 1-162-302-11 | CERAMIC | 0.0022uF | 20% | 16V (E205EY, E210AE/VP, E260) |
| C6014 | 1-162-302-11 | CERAMIC | 0.0022uF | 20% | 16V (E210CP/EE) |
| C6015 | 1-162-302-11 | CERAMIC | 0.0022uF | 20% | 16V (E210CP/EE) |
| C6015 | 1-101-880-00 | CERAMIC | 47PF | 5% | 50V (E205EY) |
| C6018 | 1-101-880-00 | CERAMIC | 47PF | 5% | 50V (E205EY) |
| C6019 | 1-162-280-31 | CERAMIC | 82PF | 10% | 50V (E205EY, E210AE/VP, E260) |
| C6057 | 1-162-302-11 | CERAMIC | 0.0022uF | 20% | 16V (E205, E210UX, E275UX) |
| C6081 | 1-161-327-00 | CERAMIC | 0.0033uF | 30% | 50V (E210AE/VP, E260) |
| C6082 | 1-161-063-00 | CERAMIC | 0.1uF | 10% | 50V |
| C6601 | 1-124-667-11 | ELECT | 10uF | 20% | 100V |
| C6602 | 1-124-667-11 | ELECT | 10uF | 20% | 100V |
| C6922 | 1-126-965-11 | ELECT | 22uF | 20% | 50V |

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

## CP-1

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| C6924 | 1-162-285-31 | CERAMIC 180PF 10% 50V | (E205UY, E210CP/EE/UX, E275UX) |
| C6925 | 1-136-171-00 | FILM 0.33uF 5% 50V | (E205UY, E210CP/EE/UX, E275UX) |
| C6926 | 1-136-169-00 | FILM 0.22uF 5% 50V | (E205UY, E210CP/EE/UX, E275UX) |
| C6926 | 1-101-880-00 | CERAMIC 47PF 5% 50V | (E210AE/VP, E260) |
| C7701 | 1-126-301-11 | ELECT 1uF 20% 50V | (E210UX/VP, E260, E275UX) |
| C7702 | 1-136-169-00 | FILM 0.22uF 5% 50V | (E210UX/VP, E260, E275UX) |
| C7703 | 1-136-169-00 | FILM 0.22uF 5% 50V | (E210UX/VP, E260, E275UX) |
| C7704 | 1-161-379-00 | CERAMIC 0.01uF 20% 25V | (E210UX/VP, E260, E275UX) |
| C7705 | 1-126-154-11 | ELECT 47uF 20% 6.3V | (E210UX/VP, E260, E275UX) |
| C7706 | 1-164-064-11 | CERAMIC 56PF 5% 50V | (E210UX/VP, E260, E275UX) |
| C7707 | 1-164-064-11 | CERAMIC 56PF 5% 50V | (E210UX/VP, E260, E275UX) |
| | | < TRIMMER > | |
| CT171 | 1-141-530-11 | CAP, TRIMMER 30P | |
| | | < DIODE > | |
| D1034 | 8-719-991-33 | DIODE 1SS133T-77 | (E210EE) |
| D1075 | 8-719-991-33 | DIODE 1SS133T-77 | |
| D1131 | 8-719-991-33 | DIODE 1SS133T-77 | (E275UX) |
| D1132 | 8-719-991-33 | DIODE 1SS133T-77 | (E275UX) |
| D1133 | 8-719-109-89 | DIODE RD5.6ES-B2 | (E205, E210AE/EE/UX/VP, E260, E275UX) |
| D1141 | 8-719-991-33 | DIODE 1SS133T-77 | (E205, E210AE/EE/UX/VP, E260, E275UX) |
| D1145 | 8-719-991-33 | DIODE 1SS133T-77 | (E205, E210AE/EE/UX/VP, E260, E275UX) |
| D1146 | 8-719-110-41 | DIODE RD15ES-B2 | (E205, E210AE/EE/UX/VP, E260, E275UX) |
| D1201 | 8-719-991-33 | DIODE 1SS133T-77 | (E205, E210AE/EE/UX/VP, E260, E275UX) |
| D1202 | 8-719-991-33 | DIODE 1SS133T-77 | (E205, E210AE/EE/UX/VP, E260, E275UX) |
| D3001 | 8-719-991-33 | DIODE 1SS133T-77 | |
| D3050 | 8-719-901-83 | DIODE 1SS83 | (E205, E210AE/EE/UX/VP, E260, E275UX) |
| D3050 | 8-719-300-45 | DIODE EM-1Z | (E210CP) |
| D3101 | 8-719-991-33 | DIODE 1SS133T-77 | (E205EY, E210AE/VP, E260) |
| D3102 | 8-719-991-33 | DIODE 1SS133T-77 | (E205UY, E210AE/UX/VP, E260, E275UX) |
| D3104 | 8-719-991-33 | DIODE 1SS133T-77 | (E210EE) |
| D3107 | 8-719-991-33 | DIODE 1SS133T-77 | (E275UX) |
| D3108 | 8-719-991-33 | DIODE 1SS133T-77 | (E210CP) |
| D3114 | 8-719-991-33 | DIODE 1SS133T-77 | |
| D3116 | 8-719-991-33 | DIODE 1SS133T-77 | (E205, E260, E275UX) |
| D3122 | 8-719-991-33 | DIODE 1SS133T-77 | (E210AE/CP/EE/VP, E260) |
| D3502 | 8-719-991-33 | DIODE 1SS133T-77 | |
| D3554 | 8-719-991-33 | DIODE 1SS133T-77 | |
| D5001 | 1-809-768-11 | DIODE DBC10G | |
| D5003 | 8-719-901-83 | DIODE 1SS83 | |
| D5004 | 8-719-901-83 | DIODE 1SS83 | |
| D5006 | 8-719-901-83 | DIODE 1SS83 | |
| D5010 | 1-808-898-11 | DIODE APOIC-V0 | |
| D5013 | 1-810-884-11 | DIODE PHOTO COUPLER PC123U2 | |
| D5020 | 1-801-319-11 | DIODE MA2270B | |
| D5021 | 1-801-320-11 | DIODE MA2300A | |
| D5022 | 1-801-320-11 | DIODE MA2300A | |
| D5023 | 1-801-320-11 | DIODE MA2300A | |
| D5101 | 1-810-795-11 | DIODE RL2Z-LF-C4 | |
| D5102 | 1-810-795-11 | DIODE RL2Z-LF-C4 | |
| D5103 | 8-719-901-83 | DIODE 1SS83 | |
| D5104 | 8-719-901-83 | DIODE 1SS83 | |
| D5105 | 1-808-899-11 | DIODE AG01-V2 | |
| D5107 | 8-719-109-89 | DIODE RD5.6ES-B2 | |
| D5109 | 8-719-109-89 | DIODE RD5.6ES-B2 | (E205, E210AE/EE/UX/VP, E260, E275UX) |
| D5109 | 8-719-921-40 | DIODE HTZJ-4.7C | (E210CP) |
| D5110 | 8-719-921-87 | DIODE MTZJ-T-77-13A | |
| D5111 | 8-719-109-93 | DIODE RD6.2ES-B2 | |
| D5116 | 8-719-300-45 | DIODE EM-1Z | |
| D6910 | 8-719-982-27 | DIODE MTZJ-T-77-33C | (E205EY, E210AE/VP, E260) |
| | | < FUSE > | |
| ⚠F5001 | 1-532-297-00 | QUICK-ACTING FUSE (T2.5A/250V) | |
| ⚠F5030 | 1-533-776-11 | THRM FUSE (2A/250V) | |

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| | | < IC > | |
| IC101 | 1-810-958-11 | IC LA7436AM-MPB | |
| IC102 | 1-810-627-11 | IC LC89970M | |
| IC103 | 1-810-636-11 | IC LA7356ML (E210EE) | |
| IC104 | 8-759-820-48 | IC LA7221 (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| IC171 | 1-801-227-11 | IC LC74763M-9146 | |
| IC201 | 1-810-497-11 | IC LA7285M-TRM | |
| IC301 | 1-801-292-11 | IC LC866744A-5A29 | |
| IC302 | 8-759-353-59 | IC LB1643 | |
| IC303 | 1-810-318-11 | IC MN1381-L(TA) | |
| IC351 | 1-810-496-11 | IC BU2896K | |
| IC511 | 1-810-060-11 | IC L5431-AA | |
| IC602 | 1-810-519-11 | IC AT24C02-10PC(E205, E210EE/UX, E275UX) | |
| IC602 | 1-810-536-11 | IC AT24C04-10PC (E210AE/CP/VP, E260) | |
| IC691 | 8-759-800-65 | IC LA7910 (E210CP/EE) | |
| IC692 | 1-809-787-11 | IC L5631 (E205UY, E210CP/EE/UX, E275UX) | |
| IC771 | 1-801-321-11 | IC MC1822D(DP) (E210UX/VP, E260, E275UX) | |
| | | < COIL > | |
| L1001 | 1-410-324-11 | INDUCTOR 4.7uH | |
| L1002 | 1-410-518-41 | INDUCTOR 56uH | |
| L1003 | 1-410-511-11 | INDUCTOR 15uH | |
| L1004 | 1-410-514-11 | INDUCTOR 27uH | |
| L1009 | 1-410-521-11 | INDUCTOR 100uH | |
| L1116 | 1-410-511-11 | INDUCTOR 15uH | |
| L1119 | 1-500-129-11 | CORE, BEAD | |
| L1231 | 1-500-210-11 | CORE, BEAD (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| L1235 | 1-500-225-11 | CORE, BEAD (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| L1325 | 1-500-210-11 | CORE, BEAD (E210CP) | |
| L1326 | 1-500-225-11 | CORE, BEAD (E275UX) | |
| L1724 | 1-410-506-11 | INDUCTOR 5.6uH | |
| L2002 | 1-410-087-31 | INDUCTOR 10mH | |
| L2003 | 1-410-491-11 | INDUCTOR 560uH | |
| L3001 | 1-500-129-11 | CORE, BEAD (E205EY, E210AE/CP/EE/VP, E260) | |
| L3003 | 1-500-129-11 | CORE, BEAD (E205EY, E210AE/CP/EE/VP, E260) | |
| ⚠L5001 | 1-409-611-11 | COIL, LINE FILTER 33mH | |
| L5010 | 1-414-540-11 | INDUCTOR 0uH | |
| L5101 | 1-410-509-11 | INDUCTOR 10uH | |
| L5102 | 1-414-540-11 | INDUCTOR 0uH | |
| L6008 | 1-410-509-11 | INDUCTOR 10uH (E205UY, E210CP/EE/UX, E275UX) | |
| L6009 | 1-410-509-11 | INDUCTOR 10uH | |
| L6602 | 1-410-509-11 | INDUCTOR 10uH | |
| L6604 | 1-414-142-11 | INDUCTOR 1uH | |
| L7701 | 1-414-540-11 | INDUCTOR 0uH(E210UX/VP, E260, E275UX) | |
| L7702 | 1-414-540-11 | INDUCTOR 0uH(E210UX/VP, E260, E275UX) | |
| | | < PROTECTOR > | |
| ⚠PR511 | 1-533-613-11 | PROTECTOR, IC 0.8A 50V | |
| | | < TRANSISTOR > | |
| Q1001 | 8-729-119-78 | TRANSISTOR 2SC2785-HFE | |
| Q1004 | 8-729-266-83 | TRANSISTOR 2SC2668 | |
| Q1005 | 8-729-119-78 | TRANSISTOR 2SC2785-HFE | |
| Q1036 | 8-729-119-78 | TRANSISTOR 2SC2785-HFE | |
| Q1043 | 8-729-902-11 | TRANSISTOR 2SC2021 | |
| Q1052 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE | |
| Q1060 | 8-729-900-89 | TRANSISTOR DTC144ES | |
| Q1137 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE (E210EE/UX/VP, E260, E275UX) | |
| Q1141 | 8-729-900-89 | TRANSISTOR DTC144ES (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| Q1145 | 8-729-993-72 | TRANSISTOR 2SA937-Q (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| Q1201 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE (E205, E210AE/CP/UX/VP, E260, E275UX) | |
| Q1201 | 8-729-119-78 | TRANSISTOR 2SC2785-HFE (E210EE) | |
| Q1211 | 8-729-119-78 | TRANSISTOR 2SC2785-HFE (E205, E210AE/CP/UX/VP, E260, E275UX) | |
| Q1211 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE (E210EE) | |
| Q1711 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE | |
| Q1712 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE | |
| Q2001 | 1-810-471-11 | TRANSISTOR 2SC3331-S-AA | |
| Q2002 | 8-729-900-89 | TRANSISTOR DTC144ES | |
| Q2003 | 1-809-869-11 | TRANSISTOR DTA124EL-TL2 | |
| Q2201 | 8-729-900-63 | TRANSISTOR DTA124ES (E275UX) | |
| Q2202 | 8-729-119-78 | TRANSISTOR 2SC2785-HFE (E275UX) | |
| Q2203 | 8-729-900-80 | TRANSISTOR DTC114ES (E275UX) | |
| Q2204 | 8-729-900-63 | TRANSISTOR DTA124ES (E275UX) | |
| Q2205 | 8-729-119-78 | TRANSISTOR 2SC2785-HFE (E275UX) | |
| Q3001 | 8-729-206-20 | TRANSISTOR DTC114EL-TL2 | |
| Q3002 | 8-729-206-20 | TRANSISTOR DTC114EL-TL2 | |
| Q3091 | 8-729-140-97 | TRANSISTOR KSA708 | |
| Q3092 | 8-729-206-20 | TRANSISTOR DTC114EL-TL2 | |
| Q3503 | 8-729-900-89 | TRANSISTOR DTC144ES(E205, E260, E275UX) | |
| Q3504 | 8-729-900-89 | TRANSISTOR DTC144ES | |
| Q3551 | 8-729-902-11 | TRANSISTOR 2SC2021 | |
| Q3552 | 8-729-902-11 | TRANSISTOR 2SC2021 | |
| Q3553 | 8-729-902-11 | TRANSISTOR 2SC2021 | |
| ⚠Q5001 | 1-810-994-11 | TRANSISTOR 2SK1460 | |
| Q5002 | 1-809-602-11 | TRANSISTOR 2SC2274-F-AA | |

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

## CP-1

| Ref. No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| Q5003 | 8-729-140-97 | TRANSISTOR | KSA708 | | | |
| Q5004 | 1-809-602-11 | TRANSISTOR | 2SC2274-F-AA | | | |
| Q5101 | 8-729-205-97 | TRANSISTOR | 2SC3668-Y | | | |
| Q5103 | 8-729-194-57 | TRANSISTOR | 2SC945-P | | | |
| Q5131 | 8-729-205-97 | TRANSISTOR | 2SC3668-Y | | | |
| Q5132 | 8-729-422-57 | TRANSISTOR | UN4111 | | | |
| Q5133 | 8-729-900-80 | TRANSISTOR | DTC114ES | | | |
| Q5134 | 8-729-119-78 | TRANSISTOR | 2SC2785-HFE | | | |
| Q6921 | 1-810-226-11 | TRANSISTOR | 2SC2960-F-SPA | | | |
| | | | (E205UY, E210CP/EE/UX, E275UX) | | | |
| | | < RESISTOR > | | | | |
| R1001 | 1-249-414-11 | CARBON | 560 | 5% | 1/4W | |
| R1002 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W | |
| R1003 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W | |
| R1004 | 1-249-412-11 | CARBON | 390 | 5% | 1/4W | |
| R1005 | 1-249-412-11 | CARBON | 390 | 5% | 1/4W | |
| R1006 | 1-249-416-11 | CARBON | 820 | 5% | 1/4W | |
| R1007 | 1-249-413-11 | CARBON | 470 | 5% | 1/4W | |
| R1008 | 1-249-413-11 | CARBON | 470 | 5% | 1/4W | |
| R1009 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R1011 | 1-249-411-11 | CARBON | 330 | 5% | 1/4W | |
| R1012 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R1013 | 1-249-409-11 | CARBON | 220 | 5% | 1/4W | |
| R1021 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W | |
| R1022 | 1-249-415-11 | CARBON | 680 | 5% | 1/4W | |
| R1023 | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W | |
| | | | | | (E205, E260, E275UX) | |
| R1026 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W | |
| R1027 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W | |
| R1030 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| | | | | | (E205, E260, E275UX) | |
| R1031 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| | | | | | (E205, E260, E275UX) | |
| R1033 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W(E210EE) | |
| R1034 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W(E210EE) | |
| R1035 | 1-249-420-11 | CARBON | 1.8K | 5% | 1/4W | |
| R1036 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R1039 | 1-249-428-11 | CARBON | 8.2K | 5% | 1/4W | |
| R1040 | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W | |
| R1042 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | |
| R1043 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R1051 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R1053 | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W | |
| R1058 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | |
| R1060 | 1-249-413-11 | CARBON | 470 | 5% | 1/4W | |
| R1067 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R1075 | 1-249-420-11 | CARBON | 1.8K | 5% | 1/4W | |
| R1081 | 1-249-434-11 | CARBON | 27K | 5% | 1/4W | |
| R1082 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R1108 | 1-249-420-11 | CARBON | 1.8K | 5% | 1/4W | |
| R1110 | 1-249-440-11 | CARBON | 82K | 5% | 1/4W | |
| R1111 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R1115 | 1-249-411-11 | CARBON | 330 | 5% | 1/4W | |
| R1121 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W(E210EE) | |
| R1122 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W(E210EE) | |
| R1131 | 1-249-411-11 | CARBON | 330 | 5% | 1/4W | |
| | | | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| R1132 | 1-249-412-11 | CARBON | 390 | 5% | 1/4W | |
| | | | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| R1137 | 1-249-405-11 | CARBON | 100 | 5% | 1/4W | |
| | | | | | (E210EE/UX/VP, E260, E275UX) | |
| R1138 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| | | | | | (E210EE/UX/VP, E260, E275UX) | |
| R1141 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| | | | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| R1142 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| | | | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| R1143 | 1-249-426-11 | CARBON | 5.6K | 5% | 1/4W | |
| | | | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| R1144 | 1-249-426-11 | CARBON | 5.6K | 5% | 1/4W | |
| | | | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| R1145 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W | |
| | | | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| R1146 | 1-249-402-11 | CARBON | 56 | 5% | 1/4W | |
| | | | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| R1203 | 1-247-804-11 | CARBON | 75 | 5% | 1/4W | |
| | | | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| R1204 | 1-249-414-11 | CARBON | 560 | 5% | 1/4W | |
| | | | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| R1204 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W(E210CP) | |
| R1206 | 1-249-409-11 | CARBON | 220 | 5% | 1/4W | |
| | | | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| R1206 | 1-249-416-11 | CARBON | 820 | 5% | 1/4W(E210CP) | |
| R1207 | 1-249-416-11 | CARBON | 820 | 5% | 1/4W(E210CP) | |
| R1211 | 1-249-418-11 | CARBON | 1.2K | 5% | 1/4W | |
| R1213 | 1-249-418-11 | CARBON | 1.2K | 5% | 1/4W | |
| R1215 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R1219 | 1-249-403-11 | CARBON | 68 | 5% | 1/4W | |
| R1231 | 1-247-804-11 | CARBON | 75 | 5% | 1/4W | |
| | | | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| R1711 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R1712 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R1713 | 1-249-405-11 | CARBON | 100 | 5% | 1/4W | |
| R1717 | 1-249-409-11 | CARBON | 220 | 5% | 1/4W | |
| R1720 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W | |
| R1721 | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W | |
| R1722 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |

| Ref. No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| R1723 | 1-249-406-11 | CARBON | 120 | 5% | 1/4W | |
| | | | (E205, E210, E260, E275UX) | | | |
| R2001 | 1-249-405-11 | CARBON | 100 | 5% | 1/4W | |
| R2002 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W | |
| R2003 | 1-249-401-11 | CARBON | 47 | 5% | 1/4W | |
| R2004 | 1-247-893-11 | CARBON | 390K | 5% | 1/4W | |
| R2005 | 1-249-426-11 | CARBON | 5.6K | 5% | 1/4W | |
| R2009 | 1-247-903-00 | CARBON | 1M | 5% | 1/4W | |
| R2010 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R2011 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R2012 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W | |
| R2013 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W | |
| R2014 | 1-249-418-11 | CARBON | 1.2K | 5% | 1/4W | |
| R2018 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W | |
| R2021 | 1-249-387-11 | CARBON | 3.3 | 5% | 1/4W | |
| R2022 | 1-249-401-11 | CARBON | 47 | 5% | 1/4W | |
| R2023 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R2024 | 1-249-391-11 | CARBON | 6.8 | 5% | 1/4W | |
| R2025 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | |
| R2026 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W | |
| R2031 | 1-249-436-11 | CARBON | 39K | 5% | 1/4W | |
| | | | | | (E205, E210, E260) | |
| R2032 | 1-249-434-11 | CARBON | 27K | 5% | 1/4W | |
| | | | | | (E205, E210, E260) | |
| R2033 | 1-249-436-11 | CARBON | 39K | 5% | 1/4W | |
| R2034 | 1-249-434-11 | CARBON | 27K | 5% | 1/4W | |
| R2041 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| | | | | | (E205, E260, E275UX) | |
| R2071 | 1-249-403-11 | CARBON | 68 | 5% | 1/4W | |
| | | | | | (E205, E260, E275UX) | |
| R2091 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W | |
| R2107 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W | |
| | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | | | |
| R2108 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W | |
| | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | | | |
| R2109 | 1-249-414-11 | CARBON | 560 | 5% | 1/4W | |
| | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | | | |
| R2110 | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W | |
| R2111 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R2123 | 1-249-415-11 | CARBON | 680 | 5% | 1/4W | |
| | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | | | |
| R2124 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | | | |
| R2125 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W (E210CP) | |
| R2126 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W (E210CP) | |
| R2201 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W (E275UX) | |
| R2202 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W (E275UX) | |
| R2203 | 1-249-432-11 | CARBON | 18K | 5% | 1/4W (E275UX) | |
| R2204 | 1-249-430-11 | CARBON | 12K | 5% | 1/4W (E275UX) | |

| Ref. No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| R2205 | 1-249-434-11 | CARBON | 27K | 5% | 1/4W (E275UX) | |
| R2206 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W (E275UX) | |
| R2207 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W (E275UX) | |
| R3001 | 1-212-946-11 | FUSIBLE | 3.3 | 5% | 1/2W | |
| R3003 | 1-249-411-11 | CARBON | 330 | 5% | 1/4W | |
| R3004 | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W | |
| R3006 | 1-249-415-11 | CARBON | 680 | 5% | 1/4W | |
| R3008 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R3009 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R3011 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | |
| R3013 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R3014 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R3015 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R3023 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R3024 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R3025 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R3026 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R3032 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W | |
| R3034 | 1-249-430-11 | CARBON | 12K | 5% | 1/4W | |
| R3035 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R3036 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R3047 | 1-249-420-11 | CARBON | 1.8K | 5% | 1/4W | |
| R3048 | 1-249-418-11 | CARBON | 1.2K | 5% | 1/4W | |
| R3049 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W | |
| R3050 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W | |
| R3051 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W | |
| R3088 | 1-249-436-11 | CARBON | 39K | 5% | 1/4W | |
| | | | | | (E205EY, E210AE/VP, E260) | |
| R3088 | 1-249-434-11 | CARBON | 27K | 5% | 1/4W | |
| | | | | | (E205UY, E210CP/EE/UX, E275UX) | |
| R3091 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W | |
| R3092 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | |
| R3093 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R3094 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W | |
| R3095 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| | | | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| R3096 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| | | | | | (E205, E210AE/EE/UX/VP, E260, E275UX) | |
| R3101 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R3102 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R3103 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R3104 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R3501 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R3502 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R3503 | 1-247-891-00 | CARBON | 330K | 5% | 1/4W | |
| R3504 | 1-247-883-00 | CARBON | 150K | 5% | 1/4W | |
| R3505 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R3506 | 1-247-887-00 | CARBON | 220K | 5% | 1/4W | |

## CP-1

| Ref. No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| R3507 | 1-247-883-00 | CARBON | 150K | 5% | 1/4W | |
| R3508 | 1-249-434-11 | CARBON | 27K | 5% | 1/4W | |
| R3509 | 1-249-405-11 | CARBON | 100 | 5% | 1/4W | |
| R3510 | 1-249-405-11 | CARBON | 100 | 5% | 1/4W | |
| R3516 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R3517 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | |
| R3518 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | |
| R3520 | 1-247-893-11 | CARBON | 390K | 5% | 1/4W | |
| R3521 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R3525 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R3526 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | |
| R3527 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R3528 | 1-249-413-11 | CARBON | 470 | 5% | 1/4W | |
| R3529 | 1-249-413-11 | CARBON | 470 | 5% | 1/4W | |
| R3533 | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W | (E205, E260, E275UX) |
| R3537 | 1-249-428-11 | CARBON | 8.2K | 5% | 1/4W | |
| R3546 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R3547 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R3549 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R3550 | 1-249-428-11 | CARBON | 8.2K | 5% | 1/4W | |
| R3551 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R3552 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R3553 | 1-247-887-00 | CARBON | 220K | 5% | 1/4W | |
| R3555 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R3556 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R3557 | 1-247-891-00 | CARBON | 330K | 5% | 1/4W | |
| R3558 | 1-249-413-11 | CARBON | 470 | 5% | 1/4W | |
| R3560 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R5001 | 1-202-724-00 | SOLID | 2.7M | 10% | 1/2W | |
| R5002 | 1-216-031-00 | METAL CHIP | 180 | 5% | 1/10W | |
| R5003 | 1-216-055-00 | METAL CHIP | 1.8K | 5% | 1/10W | |
| R5004 | 1-216-109-00 | METAL CHIP | 330K | 5% | 1/10W | |
| R5006 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W | |
| R5007 | 1-216-677-11 | METAL CHIP | 12K | 0.5% | 1/10W | |
| R5009 | 1-216-095-00 | METAL CHIP | 82K | 5% | 1/10W | |
| R5010 | 1-247-893-11 | CARBON | 390K | 5% | 1/4W | |
| R5011 | 1-247-893-11 | CARBON | 390K | 5% | 1/4W | |
| R5101 | 1-249-411-11 | CARBON | 330 | 5% | 1/4W | |
| R5102 | 1-249-412-11 | CARBON | 390 | 5% | 1/4W | (E205, E210AE/EE/UX/VP, E260, E275UX) |
| R5102 | 1-249-411-11 | CARBON | 330 | 5% | 1/4W | (E210CP) |
| R5103 | 1-249-414-11 | CARBON | 560 | 5% | 1/4W | |
| R5104 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R5105 | 1-249-416-11 | CARBON | 820 | 5% | 1/4W | |
| R5108 | 1-249-423-11 | CARBON | 3.3K | 5% | 1/4W | |
| R5109 | 1-249-423-11 | CARBON | 3.3K | 5% | 1/4W | |

| Ref. No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| R5110 | 1-212-867-00 | FUSIBLE | 27 | 5% | 1/4W | F |
| R5111 | 1-249-414-11 | CARBON | 560 | 5% | 1/4W | |
| R5112 | 1-216-063-00 | METAL CHIP | 3.9K | 5% | 1/10W | |
| R5114 | 1-249-401-11 | CARBON | 47 | 5% | 1/4W | |
| R5120 | 1-249-392-11 | CARBON | 8.2 | 5% | 1/4W | |
| R5121 | 1-249-388-11 | CARBON | 3.9 | 5% | 1/6W | |
| R5123 | 1-249-420-11 | CARBON | 1.8K | 5% | 1/4W | |
| R5132 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R5133 | 1-249-426-11 | CARBON | 5.6K | 5% | 1/4W | |
| R5134 | 1-249-428-11 | CARBON | 8.2K | 5% | 1/4W | |
| R5135 | 1-216-027-00 | METAL CHIP | 120 | 5% | 1/10W | |
| R6001 | 1-247-893-11 | CARBON | 390K | 5% | 1/4W | |
| R6002 | 1-247-889-00 | CARBON | 270K | 5% | 1/4W | |
| R6003 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | (E205UY, E210CP/EE/UX, E275UX) |
| R6004 | 1-247-881-00 | CARBON | 120K | 5% | 1/4W | (E205UY, E210CP/EE/UX, E275UX) |
| R6006 | 1-249-423-11 | CARBON | 3.3K | 5% | 1/4W | |
| R6009 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R6071 | 1-217-735-11 | FUSIBLE | 680 | 5% | 1/4W | F |
| R6921 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W | (E205UY, E210CP/EE/UX, E275UX) |
| R6922 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | (E205UY, E210CP/EE/UX, E275UX) |
| R6923 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | (E205UY, E210CP/EE/UX, E275UX) |
| R6924 | 1-249-432-11 | CARBON | 18K | 5% | 1/4W | (E205UY, E210CP/EE/UX, E275UX) |
| R6925 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | (E205UY, E210CP/EE/UX, E275UX) |
| R6926 | 1-249-430-11 | CARBON | 12K | 5% | 1/4W | (E205UY, E210CP/EE/UX, E275UX) |
| R6927 | 1-249-406-11 | CARBON | 120 | 5% | 1/4W | F (E205UY, E210CP/EE/UX, E275UX) |
| R6928 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W | (E210CP/EE) |
| R6929 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W | (E210CP/EE) |
| R7701 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | (E210UX/VP, E260, E275UX) |

< SWITCH >

| | | | |
|---|---|---|---|
| S6001 | 1-692-957-11 | SWITCH, SLIDE (1P-2T) | (E210EE) |

< TRANSFORMER >

| | | |
|---|---|---|
| T2001 | 1-433-370-11 | TRANSFORMER, OSC |
| ⚠T5001 | 1-429-506-11 | TRANSFORMER, POWER PULSE |

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| | | < TUNER > | |
| ⚠TU101 | 1-693-323-11 | TUNER (RF/TU/IF) (E205EY) | |
| ⚠TU101 | 1-693-334-11 | TUNER (RF/TU/IF) (E205UY, E210UX, E275UX) | |
| ⚠TU101 | 1-693-331-11 | TUNER (RF/TU/IF) (E210AE, E260) | |
| ⚠TU101 | 1-693-295-11 | TUNER (RF/TU/IF) (E210CP) | |
| ⚠TU101 | 1-693-341-11 | TUNER (RF/TU/IF) (E210EE) | |
| | | < VARIABLE RESISTOR > | |
| VR201 | 1-228-997-00 | RES, ADJ, METAL 100K | |
| VR351 | 1-228-998-00 | RES, ADJ, METAL 220K | |
| | | < FLAT CABLE > | |
| W0002 | 1-775-506-11 | CABLE, FLEXIBLE FLAT | |
| | | < VIBRATOR > | |
| X1001 | 1-760-652-11 | CRYSTAL OSC (4.43MHz) | |
| X1713 | 1-760-047-11 | CRISTAL (17.7MHz) | |
| X3001 | 1-760-653-11 | CERAMIC OSC (8.5MHz) | |
| X3002 | 1-579-220-11 | CRYSTAL, OSC (32KHz) | |
| X7701 | 1-760-350-11 | CRYSTAL, OSC (6.9375MHz) (E210UX/VP, E260, E275UX) | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| * | A-6796-028-A | MC-1 BOARD, COMPLETE ********** (Ref. No. 10.000 Series) | |
| | | < CAPACITOR > | |
| C8001 | 1-161-063-00 | CERAMIC 0.1uF 10% 50V | |
| | | < DIODE > | |
| D8001 | 8-810-691-11 | PHOTO DIODE PN263L-NC | |
| D8002 | 8-810-691-11 | PHOTO DIODE PN263L-NC | |
| D8003 | 8-810-690-11 | LED LN59L | |
| | | < PHOTO DIODE > | |
| PC801 | 8-810-692-11 | PHOTO DIODE ON2170-R | |
| | | < RESISTOR > | |
| R8001 | 1-249-433-11 | CARBON 22K 5% 1/4W | |
| R8002 | 1-249-429-11 | CARBON 10K 5% 1/4W | |
| R8003 | 1-249-410-11 | CARBON 270 5% 1/4W | |
| R8004 | 1-249-407-11 | CARBON 150 5% 1/4W | |
| | | < SWITCH > | |
| S8001 | 3-963-780-01 | SWITCH (P-IT), MODE(POS) | |
| S8002 | 1-762-173-11 | SWITCH, EP (1P-1T) (SAFTY/FL) | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| * | A-6796-074-A | TB-1 BOARD, COMPLETE (E210CP) ********** (Ref. No. 10.000 Series) | |
| | | < CAPACITOR > | |
| C8504 | 1-163-009-11 | CERAMIC CHIP 0.001uF 10% 50V | (E210CP) |
| C8508 | 1-163-009-11 | CERAMIC CHIP 0.001uF 10% 50V | (E210CP) |
| C8513 | 1-162-294-31 | CERAMIC 0.001uF 10% 50V | (E210CP) |
| C8531 | 1-163-009-11 | CERAMIC CHIP 0.001uF 10% 50V | (E210CP) |
| C8551 | 1-124-831-11 | ELECT 4.7uF 20% 25V | (E210CP) |
| C8552 | 1-124-589-11 | ELECT 47uF 20% 16V | (E210CP) |
| C8571 | 1-161-049-00 | CERAMIC 0.0068uF 10% 50V | (E210CP) |
| C8601 | 1-124-667-11 | ELECT 10uF 20% 100V | (E210CP) |
| C8602 | 1-124-667-11 | ELECT 10uF 20% 100V | (E210CP) |
| C8603 | 1-162-215-31 | CERAMIC 47PF 5% 50V | (E210CP) |
| C8605 | 1-161-063-00 | CERAMIC 0.1uF 10% 50V | (E210CP) |
| C8606 | 1-124-589-11 | ELECT 47uF 20% 16V | (E210CP) |
| C8607 | 1-102-129-00 | CERAMIC 0.01uF 10% 50V | (E210CP) |
| C8608 | 1-126-154-11 | ELECT 47uF 20% 6.3V | (E210CP) |
| C8609 | 1-124-472-11 | ELECT 470uF 20% 10V | (E210CP) |
| C8610 | 1-126-529-11 | ELECT 0.47uF 20% 50V | (E210CP) |
| C8611 | 1-126-529-11 | ELECT 0.47uF 20% 50V | (E210CP) |
| | | < DIODE > | |
| D8551 | 8-719-110-41 | DIODE RD15ES-B2 (E210CP) | |
| D8552 | 8-719-110-41 | DIODE RD15ES-B2 (E210CP) | |
| D8604 | 8-719-912-20 | DIODE 1SS120 (E210CP) | |
| D8605 | 8-719-912-20 | DIODE 1SS120 (E210CP) | |
| D8606 | 8-719-912-20 | DIODE 1SS120 (E210CP) | |
| D8607 | 8-719-912-20 | DIODE 1SS120 (E210CP) | |
| D8608 | 8-719-109-89 | DIODE RD5.6ES-B2 (E210CP) | |
| D8609 | 8-719-109-89 | DIODE RD5.6ES-B2 (E210CP) | |
| D8610 | 8-719-109-89 | DIODE RD5.6ES-B2 (E210CP) | |

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

**TB-1** **TM-1**

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| D8611 | 8-719-109-89 | DIODE RD5.6ES-B2 (E210CP) | |
| D8612 | 8-719-110-41 | DIODE RD15ES-B2 (E210CP) | |
| D8697 | 8-719-110-41 | DIODE RD15ES-B2 (E210CP) | |
| D8701 | 8-719-912-20 | DIODE 1SS120 (E210CP) | |
| D8702 | 8-719-912-20 | DIODE 1SS120 (E210CP) | |
| D8703 | 8-719-912-20 | DIODE 1SS120 (E210CP) | |
| | | < IC > | |
| IC851 | 8-759-300-71 | IC HD14053BFP (E210CP) | |
| IC862 | 8-759-504-94 | IC BA7630S (E210CP) | |
| | | < COIL > | |
| L8501 | 1-500-210-11 | CORE, BEAD | |
| L8502 | 1-500-210-11 | CORE, BEAD | |
| | | < TRANSISTOR > | |
| Q8601 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE (E210CP) | |
| Q8602 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE (E210CP) | |
| Q8603 | 8-729-805-45 | TRANSISTOR 2SC3395 (E210CP) | |
| Q8604 | 8-729-805-45 | TRANSISTOR 2SC3395 (E210CP) | |
| Q8605 | 8-729-216-22 | TRANSISTOR 2SA1162 (E210CP) | |
| Q8701 | 8-729-805-45 | TRANSISTOR 2SC3395 (E210CP) | |
| Q8702 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE (E210CP) | |
| | | < RESISTOR > | |
| R8502 | 1-216-059-00 | METAL CHIP 2.7K 5% | 1/10W(E210CP) |
| R8504 | 1-216-043-00 | METAL CHIP 560 5% | 1/10W(E210CP) |
| R8508 | 1-216-059-00 | METAL CHIP 2.7K 5% | 1/10W(E210CP) |
| R8522 | 1-216-059-00 | METAL CHIP 2.7K 5% | 1/10W(E210CP) |
| R8528 | 1-216-059-00 | METAL CHIP 2.7K 5% | 1/10W(E210CP) |
| R8529 | 1-216-043-00 | METAL CHIP 560 5% | 1/10W(E210CP) |
| R8551 | 1-216-049-11 | METAL GLAZE 1K 5% | 1/10W(E210CP) |
| R8555 | 1-216-049-11 | METAL GLAZE 1K 5% | 1/10W(E210CP) |
| R8556 | 1-216-049-11 | METAL GLAZE 1K 5% | 1/10W(E210CP) |
| R8557 | 1-216-049-11 | METAL GLAZE 1K 5% | 1/10W(E210CP) |
| R8558 | 1-216-071-00 | METAL CHIP 8.2K 5% | 1/10W(E210CP) |
| R8571 | 1-216-045-00 | METAL CHIP 680 5% | 1/10W(E210CP) |
| R8572 | 1-216-049-11 | METAL GLAZE 1K 5% | 1/10W(E210CP) |
| R8601 | 1-216-022-00 | METAL CHIP 75 5% | 1/10W(E210CP) |
| R8602 | 1-216-022-00 | METAL CHIP 75 5% | 1/10W(E210CP) |
| R8606 | 1-249-416-11 | CARBON 820 5% | 1/4W(E210CP) |
| R8607 | 1-249-416-11 | CARBON 820 5% | 1/4W(E210CP) |
| R8608 | 1-216-015-00 | METAL CHIP 39 5% | 1/10W(E210CP) |
| R8609 | 1-216-013-00 | METAL CHIP 33 5% | 1/10W(E210CP) |
| R8610 | 1-249-416-11 | CARBON 820 5% | 1/4W(E210CP) |
| R8611 | 1-249-416-11 | CARBON 820 5% | 1/4W(E210CP) |
| R8612 | 1-216-015-00 | METAL CHIP 39 5% | 1/10W(E210CP) |
| R8613 | 1-216-013-00 | METAL CHIP 33 5% | 1/10W(E210CP) |
| R8614 | 1-216-025-00 | METAL CHIP 100 5% | 1/10W(E210CP) |
| R8615 | 1-216-025-00 | METAL CHIP 100 5% | 1/10W(E210CP) |
| R8616 | 1-216-065-00 | METAL CHIP 4.7K 5% | 1/10W(E210CP) |
| R8617 | 1-216-065-00 | METAL CHIP 4.7K 5% | 1/10W(E210CP) |
| R8618 | 1-216-065-00 | METAL CHIP 4.7K 5% | 1/10W(E210CP) |
| R8619 | 1-216-065-00 | METAL CHIP 4.7K 5% | 1/10W(E210CP) |
| R8620 | 1-216-049-11 | METAL GLAZE 1K 5% | 1/10W(E210CP) |
| R8621 | 1-216-049-11 | METAL GLAZE 1K 5% | 1/10W(E210CP) |
| R8623 | 1-216-089-00 | METAL CHIP 47K 5% | 1/10W(E210CP) |
| R8624 | 1-216-057-00 | METAL CHIP 2.2K 5% | 1/10W(E210CP) |
| R8625 | 1-216-065-00 | METAL CHIP 4.7K 5% | 1/10W(E210CP) |
| R8626 | 1-216-037-00 | METAL CHIP 330 5% | 1/10W(E210CP) |
| R8627 | 1-216-039-00 | METAL CHIP 390 5% | 1/10W(E210CP) |
| R8628 | 1-216-065-00 | METAL CHIP 4.7K 5% | 1/10W(E210CP) |
| R8630 | 1-208-810-11 | METAL GLAZE 15K 1% | 1/10W(E210CP) |
| R8631 | 1-216-073-00 | METAL CHIP 10K 5% | 1/10W(E210CP) |
| R8701 | 1-216-073-00 | METAL CHIP 10K 5% | 1/10W(E210CP) |
| R8702 | 1-216-067-00 | METAL CHIP 5.6K 5% | 1/10W(E210CP) |
| R8703 | 1-216-067-00 | METAL CHIP 5.6K 5% | 1/10W(E210CP) |
| R8704 | 1-216-081-00 | METAL CHIP 22K 5% | 1/10W(E210CP) |
| R8705 | 1-216-019-00 | METAL CHIP 56 5% | 1/10W(E210CP) |
| R8706 | 1-216-049-11 | METAL GLAZE 1K 5% | 1/10W(E210CP) |

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| | | | |
|---|---|---|---|
| * | A-6796-052-A | TM-1 BOARD, COMPLETE (E205, E210, E260) | |
| * | A-6796-026-A | TM-1 BOARD, COMPLETE (E275UX) | |
| | | ********** | |
| | | (Ref. No. 10.000 Series) | |
| * | 3-947-425-01 | HOLDER, LED | |
| * | 3-958-684-01 | HOLDER, FL | |
| | 3-966-986-01 | HOLDER, IR (E205, E210, E260, E275UX) | |
| | | < FLUORESCENT TUBE > | |
| A7101 | 1-517-431-11 | TUBE, FLUORESCENT | |
| | | < CAPACITOR > | |
| C7103 | 1-161-379-00 | CERAMIC 0.01uF 20% | 25V |
| C7104 | 1-161-379-00 | CERAMIC 0.01uF 20% | 25V |
| C7111 | 1-162-286-31 | CERAMIC 220PF 10% | 50V (E275UX) |
| | | < DIODE > | |
| D7101 | 8-719-301-58 | DIODE SEL2910D-D | |
| D7102 | 8-719-301-58 | DIODE SEL2910D-D | |
| D7103 | 8-719-301-58 | DIODE SEL2910D-D | |
| D7104 | 8-719-301-58 | DIODE SEL2910D-D | |
| D7112 | 8-719-912-20 | DIODE 1SS120 | |
| D7113 | 8-719-912-20 | DIODE 1SS120 | |
| D7114 | 8-719-912-20 | DIODE 1SS120 | |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| D7115 | 8-719-912-20 | DIODE 1SS120 | | | |
| | | < TRANSISTOR > | | | |
| Q7103 | 8-729-206-20 | TRANSISTOR DTC114EL-TL2 | | | |
| Q7104 | 8-729-206-20 | TRANSISTOR DTC114EL-TL2 | | | |
| | | < RESISTOR > | | | |
| R7101 | 1-249-409-11 | CARBON | 220 | 5% | 1/4W |
| R7102 | 1-249-409-11 | CARBON | 220 | 5% | 1/4W |
| R7103 | 1-249-408-11 | CARBON | 180 | 5% | 1/4W |
| R7104 | 1-249-409-11 | CARBON | 220 | 5% | 1/4W |
| R7110 | 1-247-804-11 | CARBON | 75 | 5% | 1/4W(E275UX) |
| R7111 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W(E275UX) |
| | | < RECEIVER PACK UNIT > | | | |
| RR711 | 1-467-882-11 | RECEIVER PACK UNIT, IR | | | |
| | | < SWITCH > | | | |
| S7101 | 1-762-303-11 | SWITCH, PUSH (1P-1T) (CL) | | | |
| S7111 | 1-762-303-11 | SWITCH, PUSH (1P-1T) (PROGRAM +) | | | |
| S7112 | 1-762-303-11 | SWITCH, PUSH (1P-1T) (PROGRAM -) | | | |
| S7113 | 1-762-303-11 | SWITCH, PUSH (1P-1T) (ON/STANDBY) | | | |
| S7114 | 1-762-303-11 | SWITCH, PUSH (1P-1T) (AUTO TRACKING) | | | |
| S7115 | 1-762-303-11 | SWITCH, PUSH (1P-1T) (EJECT) | | | |
| S7116 | 1-762-303-11 | SWITCH, PUSH (1P-1T) (SERCH) | | | |
| S7117 | 1-762-303-11 | SWITCH, PUSH (1P-1T) (TUNING PRESET) | | | |
| S7118 | 1-762-303-11 | SWITCH, PUSH (1P-1T) (ERASE) | | | |
| S7119 | 1-762-303-11 | SWITCH, PUSH (1P-1T) (TRACKING ▲) | | | |
| S7120 | 1-762-303-11 | SWITCH, PUSH (1P-1T) (TRACKING ▼) | | | |
| * | A-6796-090-A | TM-2 BOARD, COMPLETE (E205, E210CP/EE/UX/VP) | | | |
| * | A-6796-027-A | TM-2 BOARD, COMPLETE (E210AE, E260, E275UX) | | | |
| | | ********** (Ref. No. 10.000 Series) | | | |
| | 3-964-761-01 | HOLDER | | | |
| | | < DIODE > | | | |
| D7201 | 8-719-304-77 | DIODE SEL2210R-C | | | |
| D7202 | 8-719-304-77 | DIODE SEL2210R-C | | | |
| D7211 | 8-719-912-20 | DIODE 1SS120 | | | |
| D7212 | 8-719-912-20 | DIODE 1SS120 | | | |
| D7213 | 8-719-912-20 | DIODE 1SS120 | | | |
| D7214 | 8-719-912-20 | DIODE 1SS120 (E210AE, E260, E275UX) | | | |
| D7215 | 8-719-912-20 | DIODE 1SS120 (E210AE, E260, E275UX) | | | |
| D7216 | 8-719-912-20 | DIODE 1SS120 (E210AE, E260, E275UX) | | | |
| D7217 | 8-719-912-20 | DIODE 1SS120 (E210AE, E260, E275UX) | | | |
| | | < RESISTOR > | | | |
| R7201 | 1-249-409-11 | CARBON | 220 | 5% | 1/4W |
| R7202 | 1-249-409-11 | CARBON | 220 | 5% | 1/4W |
| | | < SWITCH > | | | |
| S7201 | 1-762-303-11 | SWITCH, PUSH (1P-1T) (FF) (E205, E210CP/EE/UX/VP) | | | |
| S7202 | 1-762-303-11 | SWITCH, PUSH (1P-1T) (REW) (E205, E210CP/EE/UX/VP) | | | |
| S7203 | 1-762-303-11 | SWITCH, PUSH (1P-1T) (PAUSE) | | | |
| S7204 | 1-762-303-11 | SWITCH, PUSH (1P-1T) (REC) | | | |
| S7205 | 1-762-303-11 | SWITCH, PUSH (1P-1T) (PLAY) (E205, E210CP/EE/UX/VP) | | | |
| S7206 | 1-762-303-11 | SWITCH, PUSH (1P-1T) (STOP) (E205, E210CP/EE/UX/VP) | | | |
| S7207 | 1-572-662-11 | SWITCH, ROTARY (DUAL MODE SHUTTLE) (E210AE, E260, E275UX) | | | |
| * | A-6756-509-A | TM-8 BOARD, COMPLETE (E210EE) | | | |
| | | ********** (Ref. No. 10.000 Series) | | | |
| | | < CAPACITOR > | | | |
| C7802 | 1-162-284-31 | CERAMIC | 150PF | 10% | 50V (E210EE) |
| C7803 | 1-136-502-11 | MYLAR | 0.33uF | 5% | 50V (E210EE) |
| C7804 | 1-130-495-11 | MYLAR | 0.1uF | 5% | 50V (E210EE) |
| | | < IC > | | | |
| IC781 | 8-759-030-60 | IC SDA5642 (E210EE) | | | |
| | | < RESISTOR > | | | |
| R7805 | 1-216-057-00 | METAL CHIP | 2.2K | 5% | 1/10W(E210EE) |
| R7806 | 1-216-121-00 | METAL CHIP | 1M | 5% | 1/10W(E210EE) |
| R7807 | 1-216-119-00 | METAL CHIP | 820K | 5% | 1/10W(E210EE) |
| R7808 | 1-216-097-00 | METAL CHIP | 100K | 5% | 1/10W(E210EE) |
| R7809 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W(E210EE) |
| R7810 | 1-216-123-11 | METAL CHIP | 1.2M | 5% | 1/10W(E210EE) |
| R7811 | 1-216-025-00 | METAL CHIP | 100 | 5% | 1/10W(E210EE) |
| R7812 | 1-216-067-00 | METAL CHIP | 5.6K | 5% | 1/10W(E210EE) |

# VP-1

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| * | A-6796-309-A | VP-1 BOARD, COMPLETE (E205, E260, E275UX) | | | |
| * | A-6796-270-A | VP-1 BOARD, COMPLETE (E210) | | | |
| | | ********** | | | |
| | | (Ref. No. 10. 000 Series) | | | |
| | | < CAPACITOR > | | | |
| C1801 | 1-162-207-31 | CERAMIC | 22PF | 5% | 50V |
| C1802 | 1-162-219-31 | CERAMIC | 68PF | 5% | 50V |
| C1803 | 1-164-073-11 | CERAMIC | 100PF | 10% | 50V |
| C1804 | 1-162-211-31 | CERAMIC | 33PF | 5% | 50V |
| C1807 | 1-124-465-00 | ELECT | 0. 47uF | 20% | 50V |
| C1808 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1809 | 1-127-550-11 | ELECT(SOLID) | 3. 3uF | 20% | 16V |
| C1814 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1815 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1816 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1817 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1819 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1822 | 1-164-073-11 | CERAMIC | 100PF | 10% | 50V |
| C1823 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1824 | 1-161-379-00 | CERAMIC | 0. 01uF | 20% | 25V |
| C1825 | 1-161-057-00 | CERAMIC | 0. 033uF | 10% | 50V |
| | | < IC > | | | |
| IC181 | 1-810-869-11 | IC LA7411 | | | |
| | | < COIL > | | | |
| L1801 | 1-410-513-11 | INDUCTOR | 22uH | | |
| L1802 | 1-410-525-11 | INDUCTOR | 220uH | | |
| L1803 | 1-410-521-11 | INDUCTOR | 100uH | | |
| L1804 | 1-408-104-00 | INDUCTOR | 1mH | | |
| | | < RESISTOR > | | | |
| R1801 | 1-249-421-11 | CARBON | 2. 2K | 5% | 1/4W |
| R1803 | 1-249-423-11 | CARBON | 3. 3K | 5% | 1/4W |
| R1804 | 1-249-423-11 | CARBON | 3. 3K | 5% | 1/4W (E205, E260, E275UX) |
| R1804 | 1-249-419-11 | CARBON | 1. 5K | 5% | 1/4W (E210) |
| R1807 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W |
| R1821 | 1-249-439-11 | CARBON | 68K | 5% | 1/4W |
| R1822 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W |
| R1824 | 1-249-425-11 | CARBON | 4. 7K | 5% | 1/4W (E205, E260, E275UX) |
| R1825 | 1-249-432-11 | CARBON | 18K | 5% | 1/4W |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| | | MISCELLANEOUS | |
| | | ********** | |
| 101 | A-6751-748-A | CYLINDER COMPLETE ASSY (E210) | |
| 101 | A-6762-507-A | CYLINDER COMPLETE ASSY (E205, E260, E275) | |
| * 104 | 1-461-017-11 | ROTOR | |
| 151 | 3-963-790-01 | HEAD, FULL ERASE | |
| 162 | 3-963-791-01 | HEAD (ASSY), R/P ACE | |
| D8001 | 1-810-691-11 | PHOTO DIODE PN263L-NC (TAPE TOP SENSOR) | |
| D8002 | 1-810-691-11 | PHOTO DIODE PN263L-NC (TAPE END SENSOR) | |
| D8003 | 1-810-690-11 | LED LN59L | |
| M901 | 1-411-291-11 | STATOR (MOTOR CYL) DC 2W (DRUM HEAD) | |
| M902 | 1-698-579-11 | MOTOR, CAPSTAN DC 3W | |
| M903 | 3-961-047-01 | MOTOR ASSY, LOADING | |
| PC801 | 1-810-692-11 | PHOTO DIODE ON2170-R (REEL T SENSOR) | |
| S7207 | 1-572-662-11 | SWITCH, ROTARY (E210AE, E260, E275UX) | |
| S8001 | 3-963-780-01 | SWITCH (P-IT), MODE | |
| ⚠TU101 | 1-693-295-11 | TUNER (RF/TU/IF) (E210CP) | |
| ⚠TU101 | 1-693-323-11 | TUNER (RF/TU/IF) (E205EY) | |
| ⚠TU101 | 1-693-331-11 | TUNER (RF/TU/IF) (E210AE/VP, E260) | |
| ⚠TU101 | 1-693-334-11 | TUNER (RF/TU/IF) (E205UY, E210UX, E275UX) | |
| ⚠TU101 | 1-693-341-11 | TUNER (RF/TU/IF) (E210EE) | |

ACCESSORIES & PACKING MATERIALS

**********

| | | | |
|---|---|---|---|
| | 1-473-155-11 | REMOTE COMMANDER (RMT-V166) | (E210AE/CP/EE/VP) |
| | 1-473-155-21 | REMOTE COMMANDER (RMT-V166A) (E210UX) | |
| | 1-473-167-11 | REMOTE COMMANDER (RMT-V148P) | (E205, E275UX) |
| | 1-473-477-61 | REMOTE COMMANDER (RMT-V166J) (E260) | |
| ⚠ | 1-590-224-11 | CORD, POWER(E210AE/CP/EE/VP, E260) | |
| ⚠ | 1-590-866-11 | CORD, POWER(E205, E210UX, E275UX) | |
| | 1-765-904-11 | CABLE, ANT (1. 5m) | |
| | 3-708-923-01 | COVER, BATTERY (V166, V166A, V166J) | (E210, E260) |
| | 3-810-338-12 | MANUAL, INSTRUCTION (ENGLISH) (E275UX) | |
| | 3-810-339-11 | MANUAL, INSTRUCTION (GERMAN) (E260VP) | |
| | 3-810-340-11 | MANUAL, INSTRUCTION (FRENCH) (E260VP) | |
| | 3-810-341-11 | MANUAL, INSTRUCTION (DUTCH) (E260VP) | |
| | 3-810-342-12 | MANUAL, INSTRUCTION (ITALIAN) (E260VP) | |
| | 3-810-343-11 | MANUAL, INSTRUCTION (DANISH) (E260AP) | |
| | 3-810-344-11 | MANUAL, INSTRUCTION (SWEDISH) (E260AP) | |
| | 3-810-346-11 | MANUAL, INSTRUCTION (FINNISH) (E260AP) | |
| | 3-810-347-11 | MANUAL, INSTRUCTION (PORTUGUESE) (E260AP) | |
| | 3-810-348-11 | MANUAL, INSTRUCTION (ENGLISH) (E210UX) | |
| | 3-810-349-11 | MANUAL, INSTRUCTION (GERMAN) (E210AE/VP) | |
| | 3-810-350-11 | MANUAL, INSTRUCTION (FRENCH) (E210AE/VP) | |
| | 3-810-351-11 | MANUAL, INSTRUCTION (DUTCH) (E210AE/VP) | |

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| | 3-810-352-11 | MANUAL, INSTRUCTION (DANISH) (E210VP) | |
| | 3-810-353-11 | MANUAL, INSTRUCTION (SWEDISH) (E210VP) | |
| | 3-810-354-11 | MANUAL, INSTRUCTION (FINNISH) (E210VP) | |
| | 3-810-355-11 | MANUAL, INSTRUCTION (PORTUGUESE) (E210AE) | |
| | 3-810-356-12 | MANUAL, INSTRUCTION (ITALIAN) (E210VP) | |
| | 3-810-357-11 | MANUAL, INSTRUCTION (SPANISH) (E210CP) | |
| | 3-810-358-11 | MANUAL, INSTRUCTION (ENGLISH) (E205EY/UY) | |
| | 3-810-908-11 | MANUAL, INSTRUCTION (ENGLISH) (E210EE) | |
| | 3-810-909-11 | MANUAL, INSTRUCTION (CZECK) (E210EE) | |
| | 3-943-535-01 | COVER, BATTERY (V148P) (E205, E275UX) | |
| * | 3-963-646-01 | CUSHION (FRONT) | |
| * | 3-963-647-01 | CUSHION (BACK) | |
| * | 3-968-694-01 | CARTON, INDIVIDUAL (E210AE/CP/VP) | |
| * | 3-968-704-01 | CARTON, INDIVIDUAL (E275UX) | |
| * | 3-969-544-01 | INDIVIDUAL CARTON (E210UX) | |
| * | 3-969-577-01 | INDIVIDUAL CARTON (E205EY/UY) | |
| * | 3-969-911-01 | INDIVIDUAL CARTON (E210EE) | |
| * | 3-970-022-01 | INDIVIDUAL CARTON (E260AP/VP) | |

**********
HARDWARE LIST
**********

| | | |
|---|---|---|
| #1 | 7-685-647-79 | SCREW +BVTP 3X10 TYPE2 N-S |
| #2 | 7-685-645-79 | SCREW +BVTP 3X6 TYPE2 N-S |
| #3 | 7-685-547-19 | SCREW +BTP 3X10 TYPE2 N-S |
| #4 | 7-685-661-19 | SCREW +BVTP 4X12 TYPE2 N-S |

# SECTION 6
# IC PIN FUNCTION DESCRIPTION

## IC301 SYSTEM CONTROL, TIMER, & TUNING CONTROL MPU PIN FUNCTIONS TABLE

| No. | Name | I/O | I/O Signal Function |
|---|---|---|---|
| 1 | C SYNC | I | Sync. signal input for existing channel discrimination and TV system discrimination. |
| 2 | ORC PWM | O | Video frequency characteristics switch signal for optimum picture control. |
| 3 | DRUM UP | O | Head drum motor rotation speed up signal. |
| 4 | SS + DRUM SHIFT | O | Signal for indicating SLOW/STILL modes and alternation of drum motor control data. (3 value voltage) |
| 5 | MC - BR | O | Brake signal for capstan motor. |
| 6 | C - Vs CUT | O | Cut off for capstan motor control voltage in SLOW / STILL modes. |
| 7 | CAP P | O | Gain down control for Head Motor at SLOW mode. |
| 8 | VISS H | I | CTL pulse duty detection signal. For VISS detection. |
| 9 | POS SW0 | I | Data indicating operation position of mechanism. (0V : SEARCH,STILL,SLOW,STOP,PLAY, and REC modes) (5V : EJECT,REW, and INITIAL modes) |
| 10 | FL- START + SAFETY SW | I | Switch input indicating start of cassette loading or discharge by cassette mechanism and detecting accidental erasure prevention tab of cassette tape. |
| 11 | - | - | - |
| 12 | RESET | I | Initial reset terminal for this IC. |
| 13 | CLK 1 | - | Clock OSC during power failures. |
| 14 | CLK 2 | - | Frequency is 32kHz. |
| 15 | VSS | - | Ground terminal |
| 16 | CF 1 | - | IC clock OSC terminal. |
| 17 | CF 2 | - | Frequency is 6.5MHz. |
| 18 | VDD | - | IC power supply terminal. (5Vdc) |
| 19 | T. END S. | I | Sensor signal input for tape end detection. |
| 20 | T. TOP S. | I | Sensor signal input for tape beginning detection. |
| 21 | T. REEL S. | I | Pulse input for detection of take-up reel table rotation. |
| 22 | POS SW1+2 | I | Data indicating operation position of mechanism. (2V: EJECT,REW ,and INITIAL modes) (3.4V: STOP, PLAY,REC, and F-SEARCH modes) (2.5V: STILL and SLOW modes) (5V: R-SEARCH mode) |
| 23 | TAPE SPEED | I | Input of result of tape speed discrimination by digital servo IC. |
| 24 | AFT - C | I | Tuner AFT S-curve signal input for tuner AFT control. |
| 25 | ENV. | I | Video head envelope detection signal input for ATR function. |
| 26 | POWER DOWN | I | Power failure detection terminal. |
| 27 | - | - | - |
| 28 | 50 / 60 | O | "H" output during 60 field mode. |
| 29 | NAP H | O | "H" output during NTSC (NAP) playback mode. |
| 30 | SHORT TEST | I | REC mode indication signal input (REC 12V). |
| 31 | C - FG P. | I | FG signal input of capstan motor. |
| 32 | - | - | - |
| 33 | CTL P. | I | CTL head recording / playback pulse signal input. |
| 34 | - | - | - |
| 35 | RF SW P. | I | RF switching pulse input, created by head drum PG. |
| 36 | REMOCON | I | Remote control signal input. |
| 37 | AFT MUTE | O | "H" output during TU AFT mute. (V-syn model only) |
| 38 | G9 | O | Display grid outputs (FLD). |
| 39 | G8 | O | |
| 40 | G7 | O | |
| 41 | G6 | O | |
| 42 | G5 | O | |
| 43 | G4 | O | |
| 44 | G3 | O | |
| 45 | G2 | O | |
| 46 | G1 | O | |
| 47 | VDD | - | IC power supply input. (5Vdc) |
| 48 | V LOAD | O | -23V input for FLD drive. |
| 49 | SEG l | O | Display segment outputs (FLD). (Includes key-scan output) |
| 50 | SEG k | O | |
| 51 | SEG j | O | |
| 52 | SEG i | O | |
| 53 | SEG h | O | |
| 54 | SEG g | O | |
| 55 | SEG f | O | |
| 56 | SEG e | O | |
| 57 | SEG d | O | |
| 58 | SEG c | O | |
| 59 | SEG b | O | |
| 60 | SEG a | O | |
| 61 | TIMER REC LED | O | Signal for indicating TIMER REC mode. |
| 62 | REC LED | O | Signal for indicating REC mode. |
| 63 | OPC LED | O | Signal for indicating OPC mode. |
| 64 | ATR LED | O | Signal for indicating ATR mode. |
| 65 | KEY IN 0 | I | Operation key data inputs. |
| 66 | KEY IN 1 | I | |
| 67 | KEY IN 2 | I | |
| 68 | KEY IN 3 | I | |
| 69 | - | - | - |
| 70 | - | - | - |
| 71 | I/OTHERS | O | Signal for RF output TV-system setting. (PAL-I) |
| 72 | ACK DET | - | - |
| 73 | SV S. DATA | O | Output 8-bit X 4 serial data giving operation mode and tracking data, etc., to digital servo IC. |
| 74 | OSD CS | O | Chip enable (access) signal output to OSD IC. |
| | TUNER MUTE | O | "H" output for disable tuner audio output signal. |
| 75 | SV S. CLK | O | The clock pulse for digital servo IC. |
| 76 | S DATA | O | Terminal to respect data with OSD IC and CH+ IC. |
| 77 | I2C S.DATA | I/O | Data exchange with tuning memory.(i2C ROM) |
| 78 | S CLK | O | The clock pulse for OSD, CH+, tuning memory, PDC ,VPS, MTS and NICAM IC. |
| 79 | INPUT SEL A | O | Signal to select audio input source.(except HiFi set) |
| | TUNER A MUTE | O | Signal for disable the tuner audio signal.(HiFi set) |
| 80 | PLL CS | O | Chip enable signal output to tuner IC. (F-syn model) |
| | TU PWM | O | Tuning voltage output (PWM signal). ( V-syn model ) |
| 81 | BAND 1 | O | Tuning band data( BAND 1 and 2 ; for V-syn model ). |
| | PLL DATA | O | Data exchange with tuner PLL IC ( for F-syn model ). |
| 82 | BAND 2 | O | BAND 1 and 2 ; (L,L)=VHF-LOW (L,H)=VHF-HIGH (H,L)=UHF (H,H)=SKIP. (for V-syn model) |
| | PLL CLK | O | The clock for PLL IC of tuner unit ( for F-syn model ). |
| 83 | CH PLUS CLK | O | The clock pulse for CH+ in/out-select IC.(CH+ model) |
| | AV CTL | O | Audio input source selecting for audio IC. |
| | NTSC 3.58 | O | "H" output during NTSC mode. |
| 84 | PDC MODE 2 | O | Signal to control VPS/PDC IC. |
| 85 | LP TRICK H | O | "H" output during LP trick play mode. |
| 86 | VD MUTE | O | Signal for enable to output Video signal. |
| 87 | INPUT SEL V | O | Signal for selecting video input source. |
| 88 | REAR/FRONT | O | Signal for selecting AV-input(video/audio)source/ |
| 89 | VSS | - | IC ground terminal. |
| 90 | VDD | - | IC power supply input.(5Vdc) |
| 91 | STILL+SLOW+X2S | O | STILL, SLOW, or X2speed modes indication. |
| 92 | SPECIAL PLAY | O | Signal to indicate CUE, REV, STILL and SLOW modes. |
| 93 | VPS POWER OFF | O | Signal to toun off front display power signal, when tuner circuit is on for VPS. |
| 94 | NORMAL REC | O | Signal for indicating normal audio recording. |
| 95 | REC H | O | Signal for indicating recording mode. |
| 96 | PB H | O | Signal for indicating playback mode. |
| 97 | A MUTE+TU A MUTE | O | "H" output for disable audio output signal. |
| 98 | POWER UP | O | "HIGH" output except when power is off. Indicating that power is ON. |
| 99 | ML- S | O | Loading motor rotation speed (low / medium / high) indication signal. |
| 100 | ML- D | O | Loading motor rotation direction (FWD / REV) indication signal. |

# SECTION 7
# MECHANICAL ADJUSTMENTS

## 7-1. MAINTAINING AND CHECKING THE MECHANISM

### 1-1. REGULAR CHECKS AND MAINTENANCE ITEMS

To obtain full function and maximum performance from the set, and to stop it getting dirty or scratched, we recommend that you carry out the following maintenance procedures and regular checks. The maintenance checks described in the following section should also be carried out without fail after carrying out any repairs to the set.

**NOTE: OIL AND GREASE**

- Always use the specified brands of oil and grease. If you use a grease with the wrong viscosity, for example, this can lead to all sorts of problems. Be careful to keep the oil and grease free of dust and foreign bodies.
- A "drop" of oil is the amount of oil remaining on the tip of a rod with a diameter of 1.5mm after it is dipped in oil to a depth of 1cm and then taken out.

#### 1-1-1. REGULAR CHECKS

○Clean ◎Check △Oil

| Part maintained \ Hours of use (H) | | 500 | 1000 | 1500 | 2000 | 2500 | 3000 | 3500 | 4000 | 4500 | 5000 | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tape path system | Tape guide | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | ACE head, full erase head | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Cylinder (drum) | ○ | ○ (◎) | ○ (◎) | ○ (◎) | ○ (◎) | ○ (◎) | ○ (◎) | ○ (◎) | ○ (◎) | ○ (◎) | The life of parts varies enormously, depending on the environment in which the part is used. |
| | Cleaner roller assembly | | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | |
| | Pinch roller | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| Drive system | Reel table | | ○ | | ○△ | | ○ | | ○△ | | ○ | |
| | Reel belt | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | Relay gear, Pulley shaft, Gear shaft | | △ | | △ | | △ | | △ | | △ | Be careful not to get any oil on the tape path surface. |
| | Loading motor | | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | |
| Perform-ance checks | Back tension | | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | Playback tension torque: 30 to 50g/cm |
| | Brake system | | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | |
| | FWD, REW, PLAY torque, REV torque | | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | FWD: 600g/cm or over<br>REW: 600g/cm or over<br>PLAY (SP mode): 80 to 140g/cm<br>REV: 120 to 220g/cm |

#### 1-1-2. CLEANING

**1. Cylinder (Drum) (See Fig.1-1-1)**

Moisten a chamois with methyl alcohol and clean the video head (including the Hi-Fi audio head) and the tape path surface of the cylinder. Be sure to wipe horizontally in relation to the video head. If you wipe vertically, or use excessive force, you can damage the video head.

**2. Tape Path System / Reel Drive System**

Clean the pinch roller, the capstan shaft, the tape guides, the FE head, the ACE head, the reel table, the pulley and the reel belt with a soft cloth, or chamois, moistened with methyl alcohol.

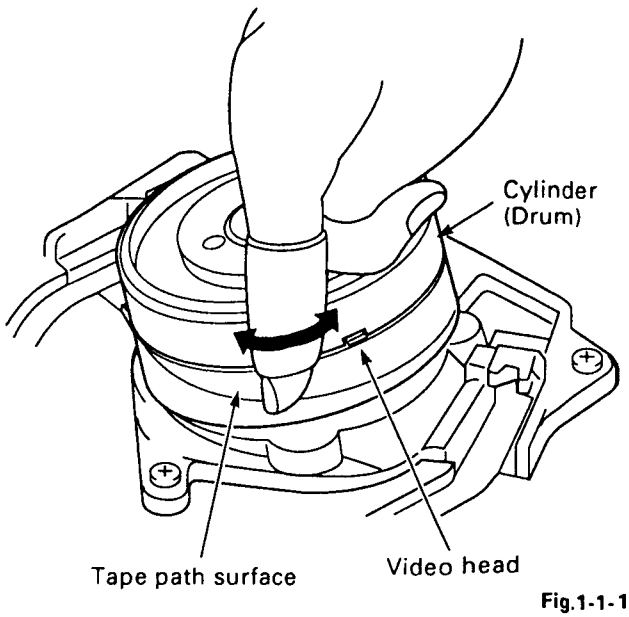
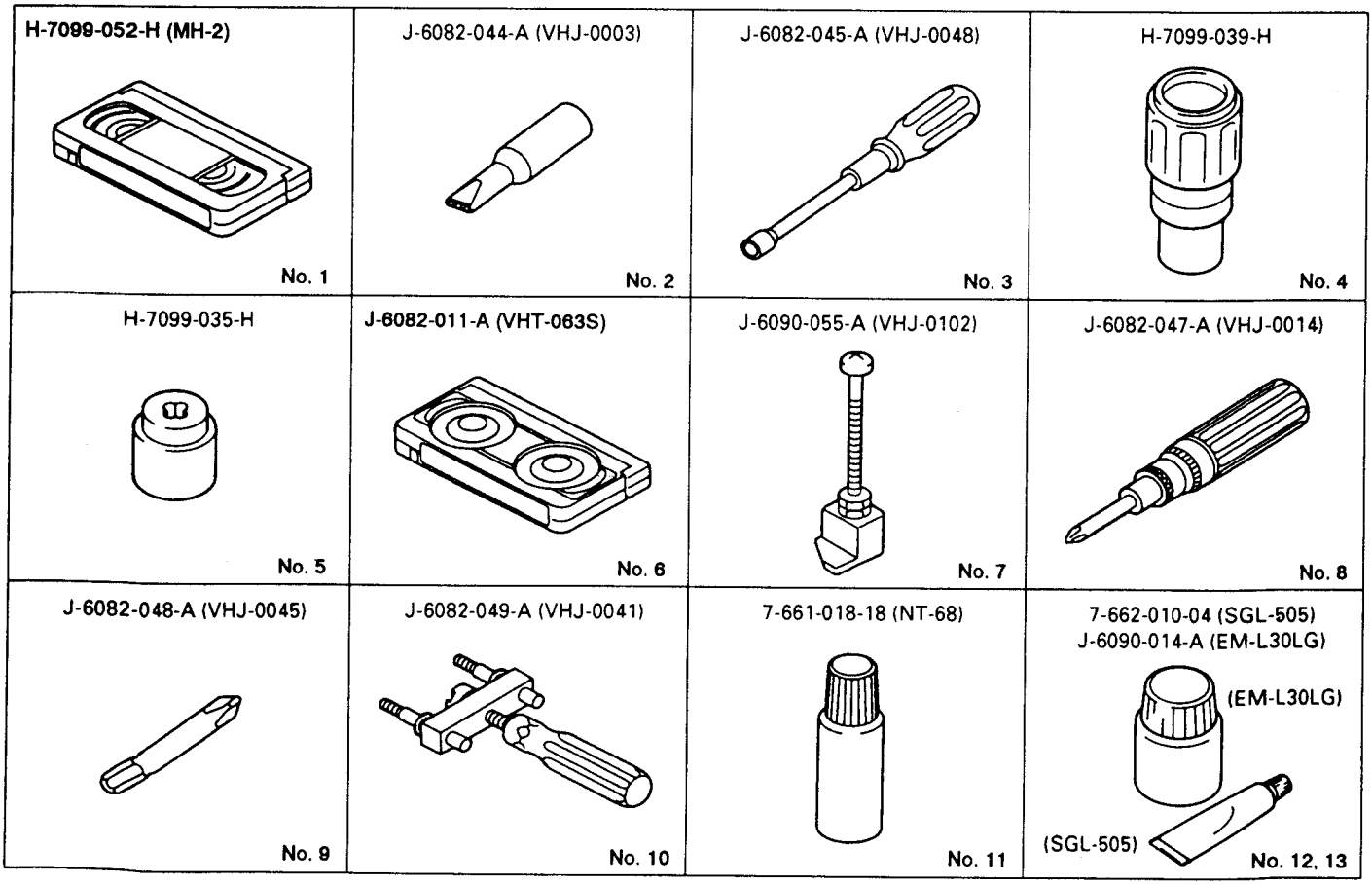



Fig.1-1-1

## 1-2. SERVICE TOOLS
### NOTES ON ALIGNMENT TAPES

| No. | Tool | Tool No. | Remarks |
|---|---|---|---|
| 1 | Alignment tape PAL (MH-2) | H-7099-052-H | COLOR BAR |
| 2 | Eccentric screwdriver (VHJ-0003) | J-6082-044-A | Used to adjust the tape path |
| 3 | Nut box (VHJ-0048) | J-6082-045-A | Used to adjust the height of the lever load assembly |
| 4 | Torque gauge | H-7099-039-H | Used to measure reel winding torque |
| 5 | Torque gauge adaptor | H-7099-035-H | |
| 6 | Cassette torque (VHT-063S) | J-6082-011-A | Used to measure back tension torque |
| 7 | Load lever assembly height adjustment tool (VHJ-0102) | J-6090-055-A | Used to adjust the height of the load lever assembly |
| 8 | Torque gauge screwdriver (VHJ-0014) | J-6082-047-A | Used to adjust the tightening torque of screws |
| 9 | 3 mm dia. bit for torque screwdriver (VHJ-0045) | J-6082-048-A | Used to replace the bit of the torque gauge screwdriver |
| 10 | Video head removing tool (VHJ-0041) | J-6082-049-A | Used to remove the upper cylinder |
| 11 | Oil NT-68 | 7-661-018-18 | |
| 12 | Grease SGL-505 | 7-662-010-04 | |
| 13 | Grease EM-L30LG | J-6090-014-A | |



## 7-2. AN OVERVIEW OF THE MECHANISM

## 2-1. NAMES OF THE MAIN PARTS

### 2-1-1. TOP SIDE

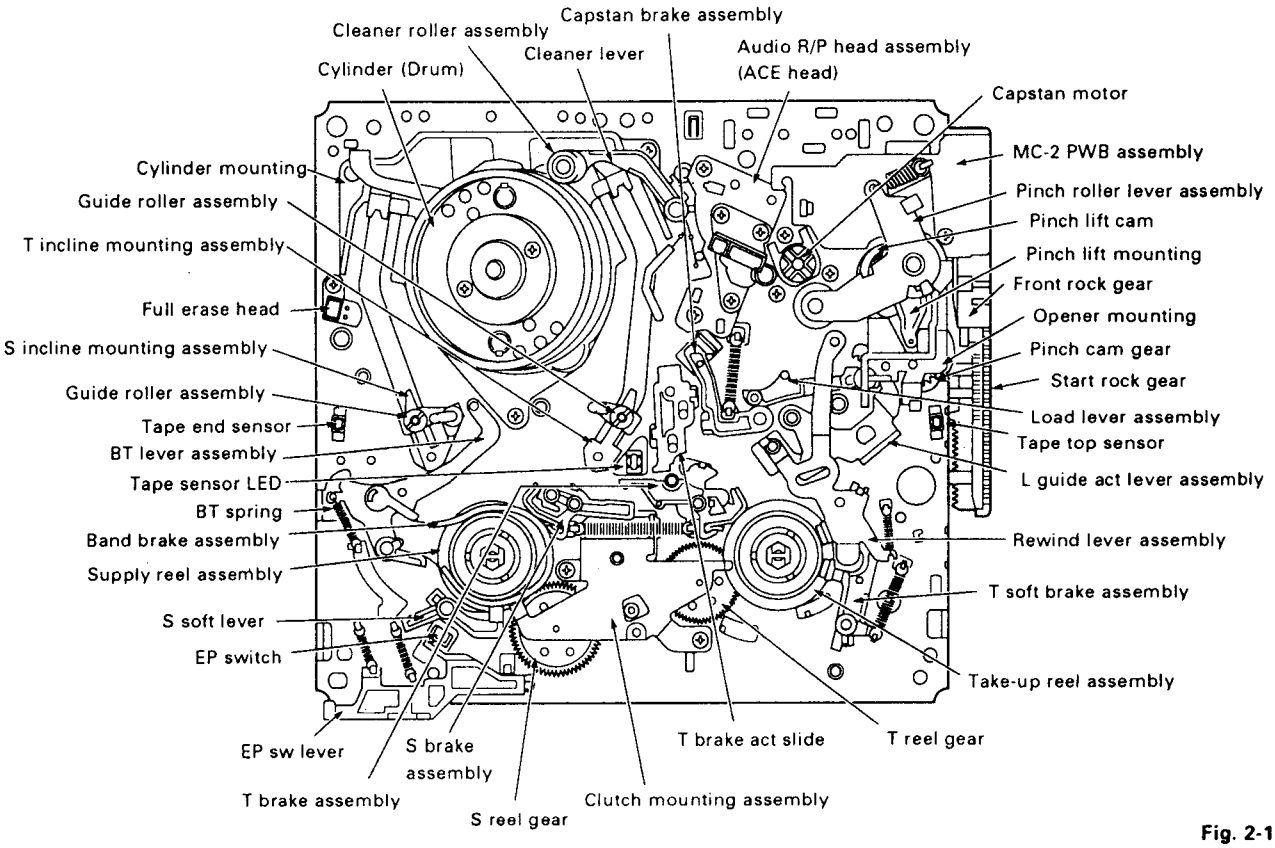



Fig. 2-1-1

### 2-1-2. UNDERSIDE

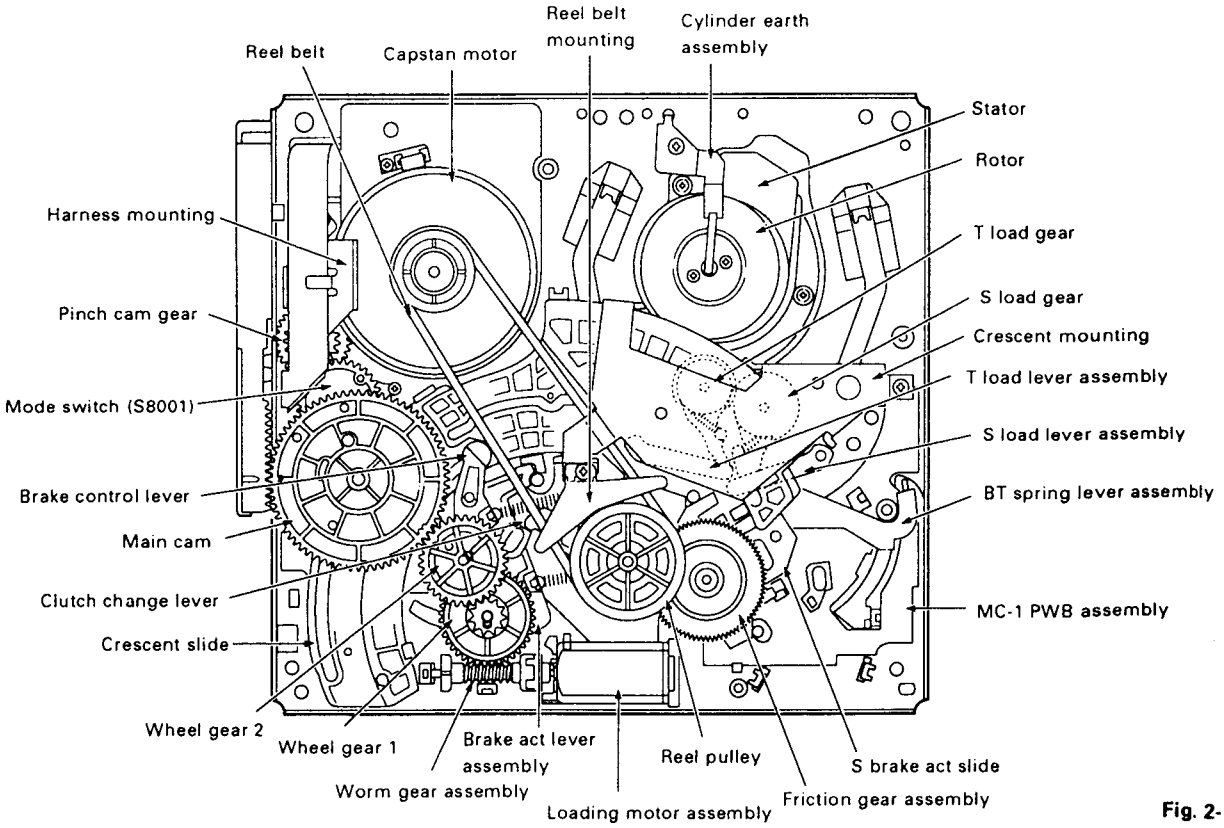



Fig. 2-1-2

## 2-1-3. CASSETTE MECHANISM ASSEMBLY

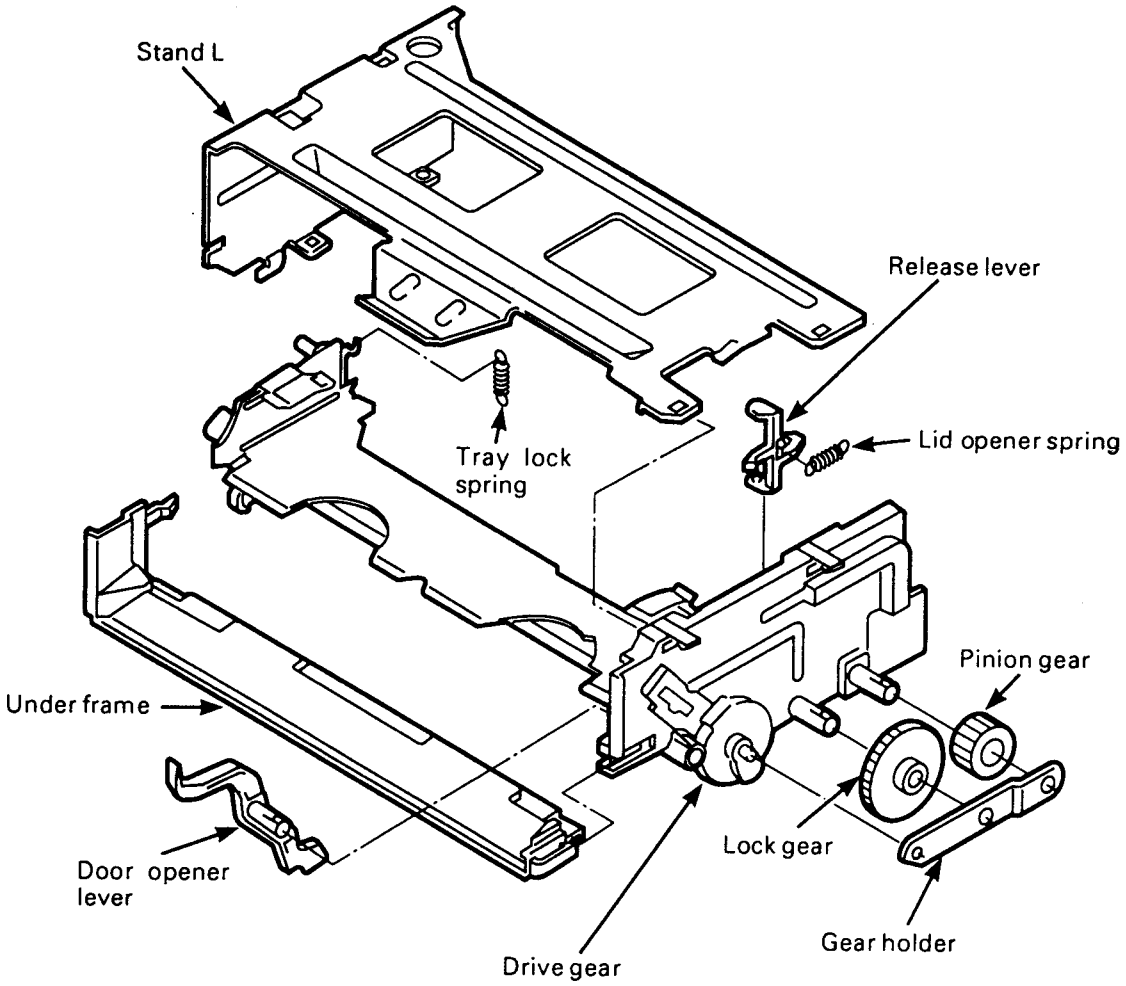
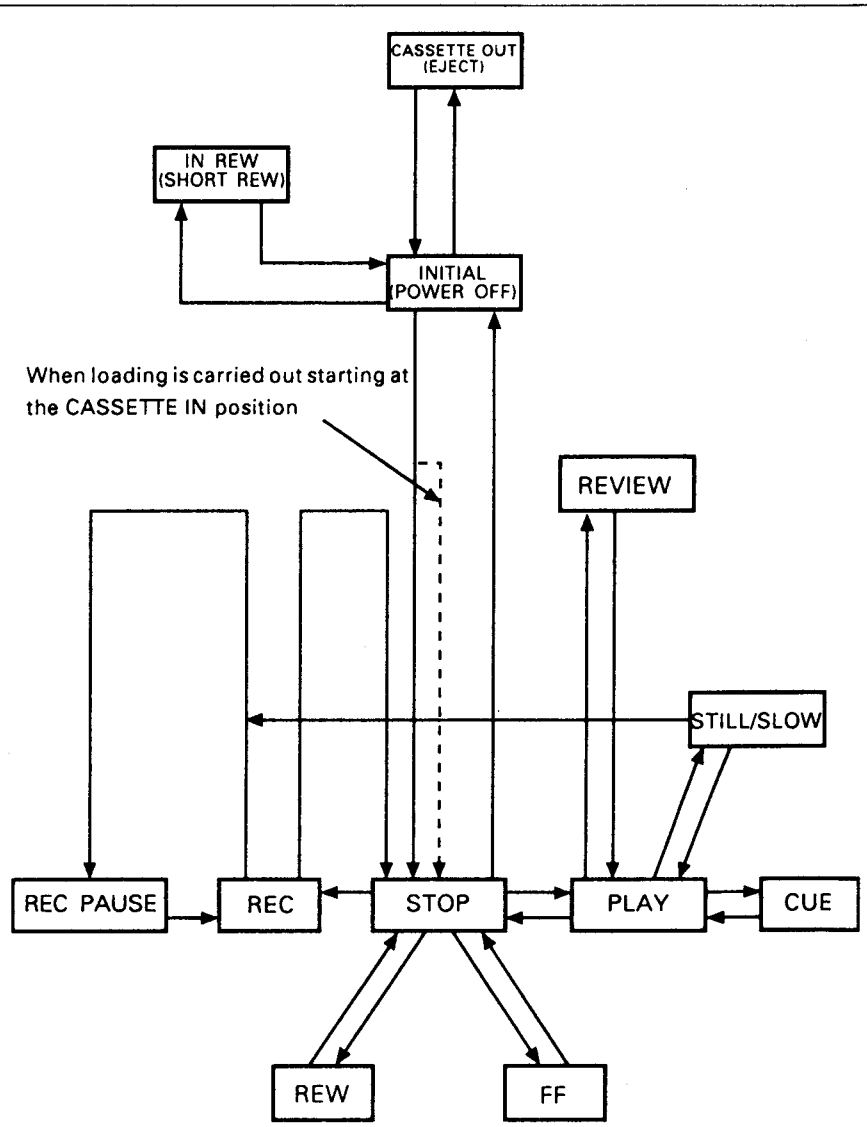



Fig. 2-1-3

## 2-2. AN OVERVIEW OF THE MECHANISM MODES

### 2-2-1. MECHANISM MODE SWITCHING TABLE

**NOTE**: The letters and figures enclosed in circles in the mechanism mode column are the codes on the crescent slide.

| HEX DATA | Mechanism mode | The principal mode-switching states of the mechanism |
|---|---|---|
| 6 | ⇐ EJECT Ⓔ Distinguished by whether the EP switch is ON or OFF. Horizontal shift section. Vertical shift section. |  |
| 2 | ⇐ IN REW | |
| 0 | | |
| 7 | ⇐ INITIAL ⑦ | |
| 0 | Cleaner roller assembly: ON | |
| 1 | S/T mounting incline assembly pressure begins. | |
| 0 | S/T mounting incline assembly pressure ends. | |
| 1 | ⇐ REVIEW ① | |
| 0 | | |
| 2 | IDLER pos. ② (Pinch roller OFF) | |
| 0 | | |
| 3 | ⇐ STILL/SLOW ③ | |
| 0 | | |
| 5 | ⇐ PLAY/STOP ⑤ | |
| 0 | | |
| 4 | BRAKE pos. ④ | |
| 0 | | |
| 6 | ⇐ FF/REW ⑥ | |



### MODE SWITCH OUTPUT TABLE

| HEX DATA | SW DATA 1 | X | Y | SW DATA 2 Z | |
|---|---|---|---|---|---|
| 0 | 5.0V | H | H | H | 5V |
| 1 | 5.0V | H | H | L | 0V |
| 2 | 2.5V | H | L | H | 5V |
| 3 | 2.5V | H | L | L | 0V |
| 4 | 3.4V | L | H | H | 5V |
| 5 | 3.4V | L | H | L | 0V |
| 6 | 2.0V | L | L | H | 5V |
| 7 | 2.0V | L | L | L | 0V |

### APPEARANCE OF MODE SWITCH AND RELATIONSHIP BETWEEN MODE POSITIONS

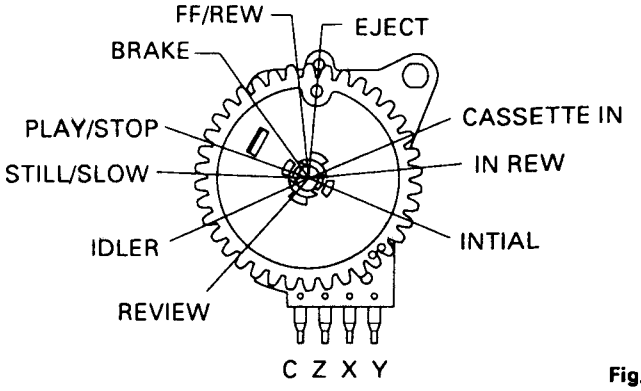



Fig.2-2-1

## 2-2-2. MOVEMENT CHECK LIST FOR THE MAIN PARTS OF THE MECHANISM

(S): Strength (W): Weakness

| Principal parts \ Mechanism mode | EJECT | IN REW | INITIAL (POWER OFF) | (LOADING) | (UNLOADING) | REV | IDLER | STILL/SLOW | PLAY/STOP | BRAKE | FF/REW | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T brake assembly | OFF | OFF | ON | ON | ON | OFF | OFF | OFF | OFF | ON | ON/OFF | |
| S brake assembly | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON/OFF | |
| T soft brake assembly | OFF | OFF | OFF | ON | ON | ON | ON | OFF | OFF | OFF | OFF | |
| S soft lever | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF | |
| BT lever assembly | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON | |
| BT spring | OFF | OFF | OFF | OFF | OFF | ON(W) | ON(W) | ON(S) | ON(S) | ON(S) | ON(W) | |
| Rewind lever assembly | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | |
| Pinch roller lever assembly | UP | UP | UP | UP/ DOWN | DOWN/ UP | ON | OFF | ON | ON | OFF | OFF | |
| Clutch mounting assembly | PLAY | PLAY | PLAY | PLAY | PLAY | PLAY | PLAY | PLAY | PLAY | PLAY | FF | |
| Load lever assembly | UNLO | UNLO | UNLO | LO | LO | LO | LO | LO | LO | LO | LO | |
| Capstan brake assembly | OFF | OFF | OFF | OFF | OFF | OFF | OFF | ON | OFF | OFF | OFF | |
| S and T incline mounting assembly | | | | LO | UNLO | | | | | | | |
| Cleaner roller assembly | OFF | OFF | OFF | (ON) | (ON) | OFF | OFF | OFF | OFF | OFF | OFF | |

## 2-2-3. HOW TO CHECK THE MECHANISM MODE POSITION

You can tell which mode the mechanism is currently in by looking at the codes and marking-lines on the crescent slide on the underside of the mechanism chassis. The edge of the crescent mounting is used as the reference line, as shown in Fig.2-2-2, and the marking-lines and symbols indicating the mechanism modes are displayed on the crescent slide, which slides against the edge of the crescent mounting. The mechanism mode is read off from the marking-line on the slide crescent which is aligned with the reference-line on the crescent mounting.

Example: In Fig.2-2-2, marking-line 6 is aligned with the reference-line on the crescent mounting, so the mechanism is seen to be in FF/REW mode.

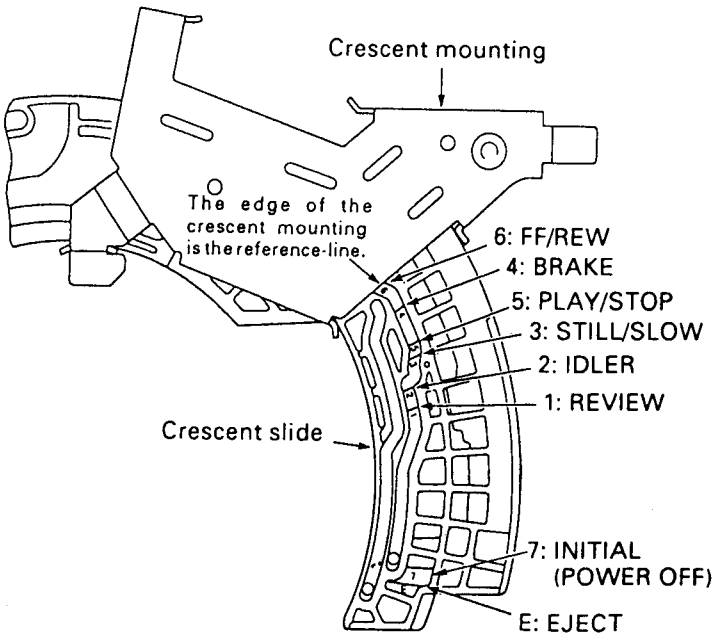



Fig.2-2-2

## 7-3. DISASSEMBLING THE MAIN PARTS OF THE MECHANISM

### POINTS TO NOTE

- When fitting the parts of the mechanism, refer to the "Assembly Notes", and proceed in the reverse of dis-assembly order.
- Dis-assembly and assembly should be carried out in EJECT mode unless a movement mode is explicitly specified. EJECT mode is the state in which the cassette tape has been ejected.
- Clamps are used to prevent parts coming loose. When removing a clamp, be careful not to force it, as this can result in damage.

## 3-1. HOW TO MAKE THE MECHANISM MOVE

In order to check a movement such as front loading, front unloading, tape loading, tape unloading, raising/lowering and pressing the pinch roller, you will need to operate the loading motor. There are two methods of operating the loading motor, and these are explained in sections 3-1-1 and 3-1-2. The above movements can also be performed without operating the loading motor, by following the method explained in section 3-1-3.

### 3-1-1. HOW TO OPERATE THE LOADING MOTOR USING A DC VOLTAGE SUPPLY (See Fig.3-1-1)

1) Remove the power plug from the socket.
2) Unplug the flat cable from the CN811 socket on the MC-2 PWB assembly.
3) Apply a DC voltage in the range from 5 to 10V between the EJECT pin and the PLAY pin on the MC-2 PWB assembly. To make the loading motor rotate in the PLAY or FF/REW direction, the positive terminal should be connected to the PLAY pin, and the negative terminal to the EJECT pin. To make it rotate in the EJECT direction, connect the positive terminal to the EJECT pin, and the negative terminal to the PLAY pin.

**NOTE 1**: When carrying out front loading, release the lock by pressing down the tray lock lever ⑧ and the lid opener lever ⑨ of the cassette mechanism assembly (shown in Fig.3-2-2) in the direction of the arrow.

**NOTE 2**: When the loading motor stops rotating, following the completion of an operation such as tape loading or front unloading, switch off the DC voltage supply.

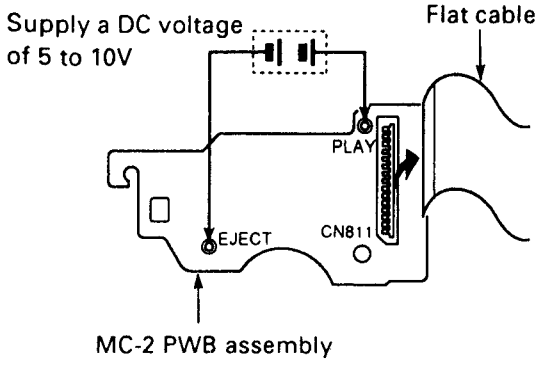



Fig.3-1-1

### 3-1-2. OPERATING THE LOADING MOTOR BY THE MANUAL METHOD (See Fig.3-1-2)

1) Refer to section 3-2 and install the mechanism unit.
2) Using your finger, turn the loading motor located at the rear of the mechanism unit. For EJECT, turn the loading motor in the direction of the arrow on the loading motor. For PLAY or FF/REW, turn it in the opposite direction.

**NOTE**: When carrying out front loading, release the lock by pressing down the tray lock lever ⑧ and the lid opener lever ⑨ of the cassette mechanism assembly (shown in Fig.3-2-2).

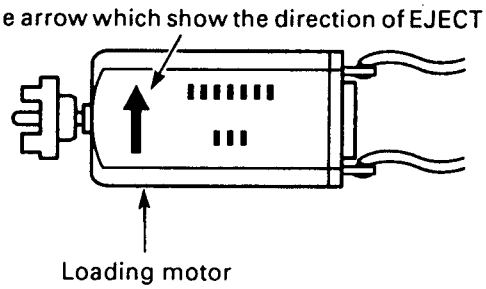



Fig.3-1-2

### 3-1-3. MAKING THE MECHANISM MOVE USING THE MANUAL METHOD

1) Refer to section 3-2 and remove the mechanism unit.
2) Refer to section 3-15 and remove the gear wheel 2.
3) If you turn the main cam anticlockwise, the mechanism will switch to a mode such as PLAY or FF/REW. To switch from FF/REW mode to EJECT mode, turn the main cam clockwise.

## 3-2. MECHANISM UNIT (See Figs. 3-2-1 and 3-2-2)

1) Remove the top cover, bottom cover and front cabinet assembly. Then remove the screw ⑩.
2) Unplug the flat cable ① from the VM-1 PWB assembly on the cylinder (drum), unplug the flat cable ② from the CN811 socket on the MC-2 PWB assembly, and unplug the ACE head connector ③.
3) Remove the two screws ④, then remove the VM-1 PWB assembly ⑤, lifting it upwards. The shape of the VM-1 PWB assembly and the bracket varies according to the model.
4) Remove the four screws ⑥ and lift up the mechanism unit. The tray ⑦ will stop you removing the two screws ⑥ on the front, so release the lock by pressing down the tray lock lever ⑧ and the lid opener lever ⑨ shown in Fig.3-2-2, then slide off the tray ⑦. Move the tray by referring to section 3-1 and turn the loading motor in the PLAY direction.

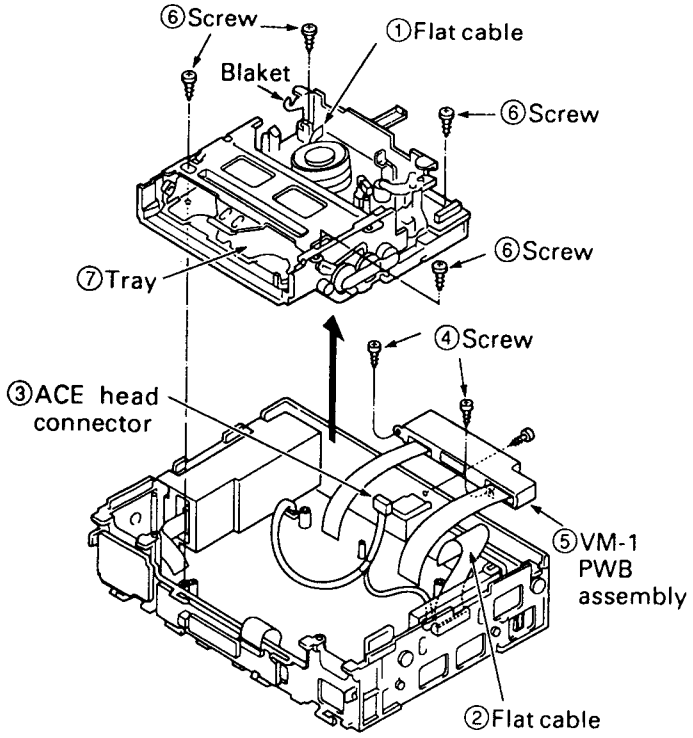



Fig.3-2-1

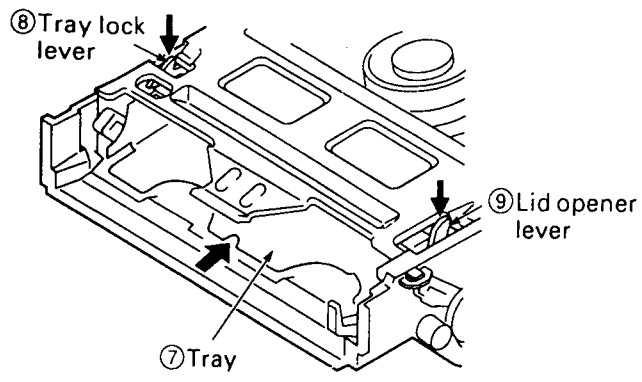



Fig.3-2-2

## 3-3. CASSETTE DRIVE MECHANISM

### 3-3-1. CASSETTE MECHANISM ASSEMBLY (See Figs.3-3-1 and 3-3-2)

1) Put the VCR into EJECT mode.
2) Remove the two screws ①.
3) Lift up the back of the cassette mechanism assembly ② slightly, and remove the two hooks ③ on the front.

**ASSEMBLY NOTES:**

1. The cassette mechanism assembly and the mechanism chassis should both be fitted in EJECT mode.
2. Check that the two hooks ③ have snapped into the mechanism chassis, and make sure that the two holes ④ in the cassette mechanism assembly are aligned with the two dowels ⑤ on the mechanism chassis.
3. Make sure that the big tooth on the pinion gear of the cassette mechanism assembly slots properly into the deepest gap in the start rack gear, as shown in Fig.3-3-2.
4. When fitting the two screws ①, use the torque gauge screwdriver (VHJ-0014). Give the screws a tightening torque of 5 kg/cm.

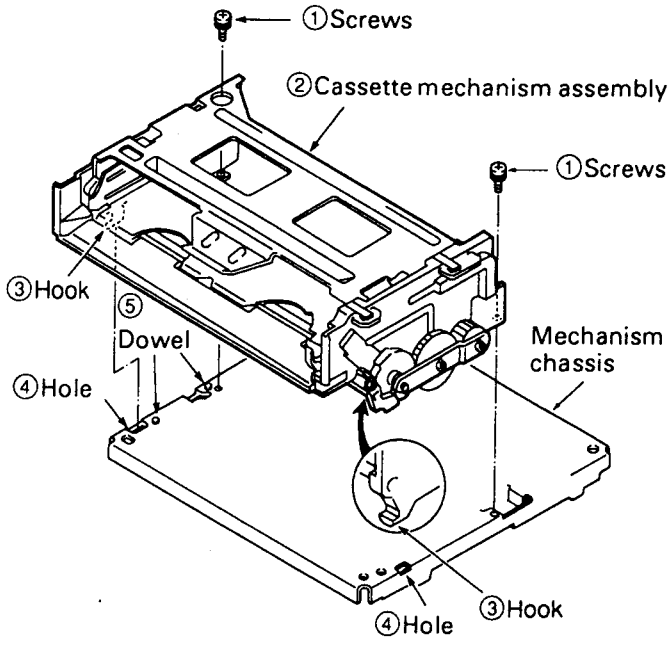



Fig.3-3-1

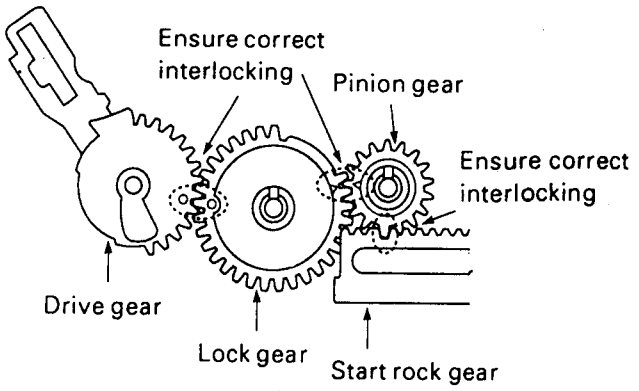



Fig.3-3-2

### 3-3-2. CASSETTE DRIVE GEAR (See Fig.3-3-3)

1) Refer to section 3-3-1 and remove the cassette mechanism assembly.
2) Remove clamps ① and ②, then remove the gear holder ③.
3) Remove the clamp ① ,then remove the pinion gear ④.
4) Remove the clamp ② ,then remove the lock gear ⑤.

### ASSEMBLY NOTES:

1. Put the tray in the EJECT mode position before fitting any parts.
2. Apply grease (SGL-505) to the gear mounting shafts, all the gear teeth, and the cam part of the drive gear ⑥.
3. Ensure that the drive gear, the lock gear and the pinion gear interlock correctly, as shown in Fig.3-3-2.
4. Make sure the clamps ① and ② snap in to the gear holder ③.

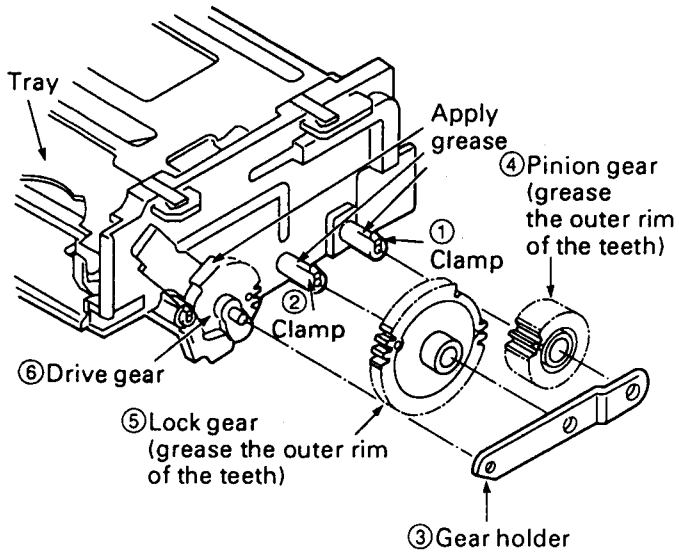



Fig.3-3-3

### 3-3-3. DOOR OPENER, UNDER FRAME AND STAND L (See Fig.3-3-4)

1) Remove the cassette mechanism assembly, referring to section 3-1.
2) Remove the two clamps ① and take out the under frame ②, pulling it towards you.
3) Press down the tray lock lever ③ and the lid opener lever ④, and loosen the tray ⑤, lifting it away from you. In this state, press the clamp ⑥ and remove the door opener lever ⑦.
4) Remove the two clamps ⑧ and take out the stand L ⑨. Be careful not to exert too much force on the clamps ⑧, as this could cause damage.

### ASSEMBLY NOTES:

1. Apply grease (SGL-505) to the grooves ⑪ on the stand L, the stand L, the inside of the hole ⑬ in the drive shaft ⑫, and the mounting hole ⑭ in the door opener lever of the stand R.
2. Before fitting the stand L ⑨, be sure to move the tray ⑤ back as far as the EJECT mode position. Put the two pins ⑩ on the tray ⑤ into the grooves ⑪ on the stand L. Put the drive shaft ⑫ into the hole ⑬.
3. Be sure to fasten the two clamps ① and the clamp ⑥ on the stand R, and to fasten the two clamps ⑧ on the stand L.

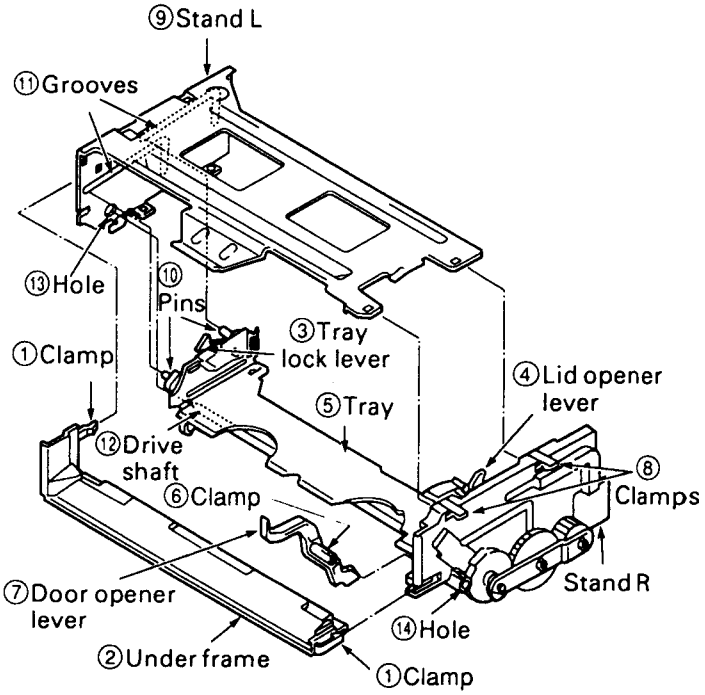



Fig.3-3-4

### 3-3-4. START RACK GEAR AND FRONT RACK GEAR (See Figs.3-3-5 and 3-3-6)

1) Remove the mechanism unit, referring to section 3-2.
2) Remove the cassette mechanism assembly, referring to section 3-3-1.
3) Remove the special screw ①. When you do this, slide the front gear rack assembly ② towards the front until it stops, then take it off the shaft ③. Take care not to damage the shaft ③.
4) Remove the spring ④.
5) Remove the clamp ⑥ on the front rack gear ⑤, then remove the start rack gear ⑦.

**ASSEMBLY NOTES:**

1. Apply grease (SGL-505) to the front rack gear ⑤ and all over the inside of the groove on the start rack gear ⑦.
2. Align the positioning mark ⑧ on the front rack gear ⑤ with the mark ⑩ on the main cam ⑨.
3. When installing the cassette mechanism assembly, refer to section 3-3-1 and align the start rack gear with the pinion gear.

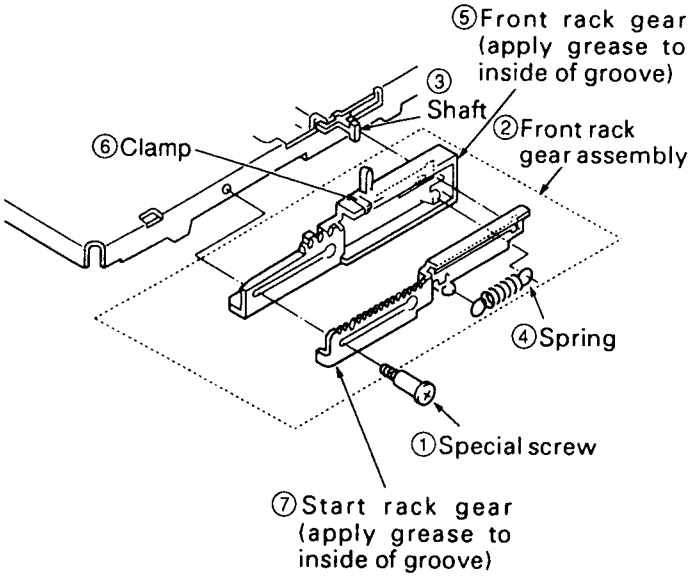

⑤Front rack gear (apply grease to inside of groove)
③ Shaft
⑥Clamp
②Front rack gear assembly
④Spring
①Special screw
⑦Start rack gear (apply grease to inside of groove)

Fig.3-3-5

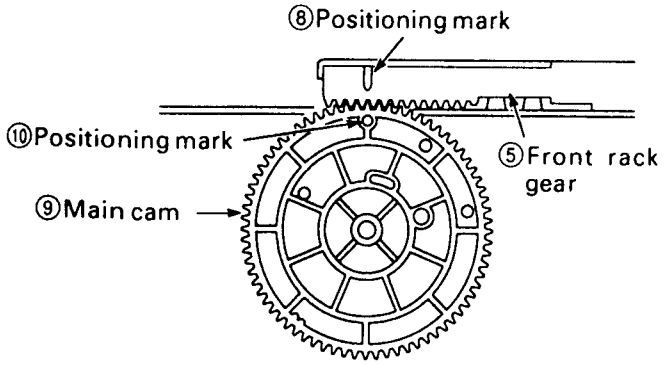



Fig.3-3-6

## 3-4. CLEANER ROLLER ASSEMBLY (See Fig.3-4-1)

1) Remove the clamp ① and take out the cleaner lever ②. When you do this, be careful not to bend the plastic springs Ⓐ and Ⓑ on the cleaner lever ②.
2) Remove the clamp ③, and take out the cleaner roller assembly ④. Be careful not to touch the sponge on the cleaner roller assembly ④.

**ASSEMBLY NOTES:**

1. When mounting the cleaner lever ② on the shaft ⑤, press the clamp ① in the direction shown by the arrow, and snap it into the mounting ⑥ on the audio R/P head assembly.

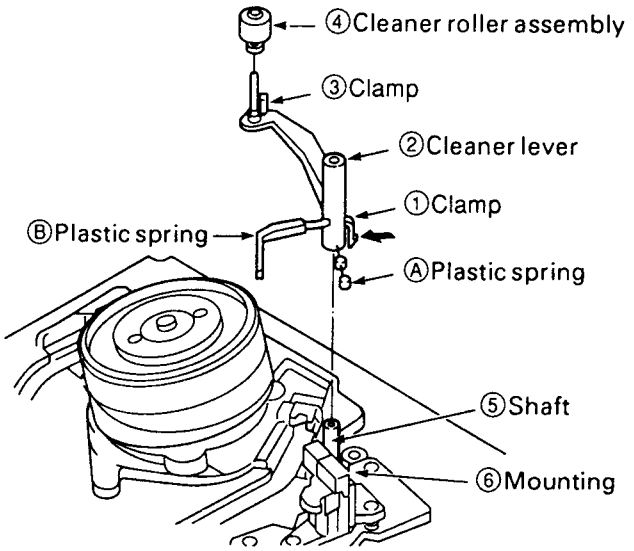



Fig.3-4-1

## 3-5. CYLINDER (DRUM)

### 3-5-1. CYLINDER (DRUM) UNIT (See Fig.3-5-5)

1) Put the mechanism into EJECT mode.
2) Refer to section 3-2 and remove the VM-1 PWB assembly
3) Refer to section 3-4 and remove the cleaner lever.
4) Remove the two screws ① and take off the bracket ②. The bracket shape varies according to the model.
5) Remove the three screws ③. Taking care not to scratch or soil the tape path surface of the cylinder (drum), lift the mounting cylinder ④ slightly, and keeping it raised, unplug the connector ⑤. (If you experience difficulty in unplugging the connector, refer to section 3-2 and remove the mechanism unit first, then unplug the connector.)

**ASSEMBLY NOTES:**

1. Apply grease (SGL-505) to the rails (front and rear) of the cylinder mounting ④ (grease the parts which come in contact with the S and T inscline mounting assembly).
2. Align the two dowels ⑥ on the mounting cylinder ④ with the two holes ⑦ on the mechanism chassis.
3. After assembly, clean the tape path surface of the cylinder (drum).
4. After replacing the cylinder unit, do the tape path adjustment as instructed in section 4-3, and do the switching position adjustment of the servo circuit.

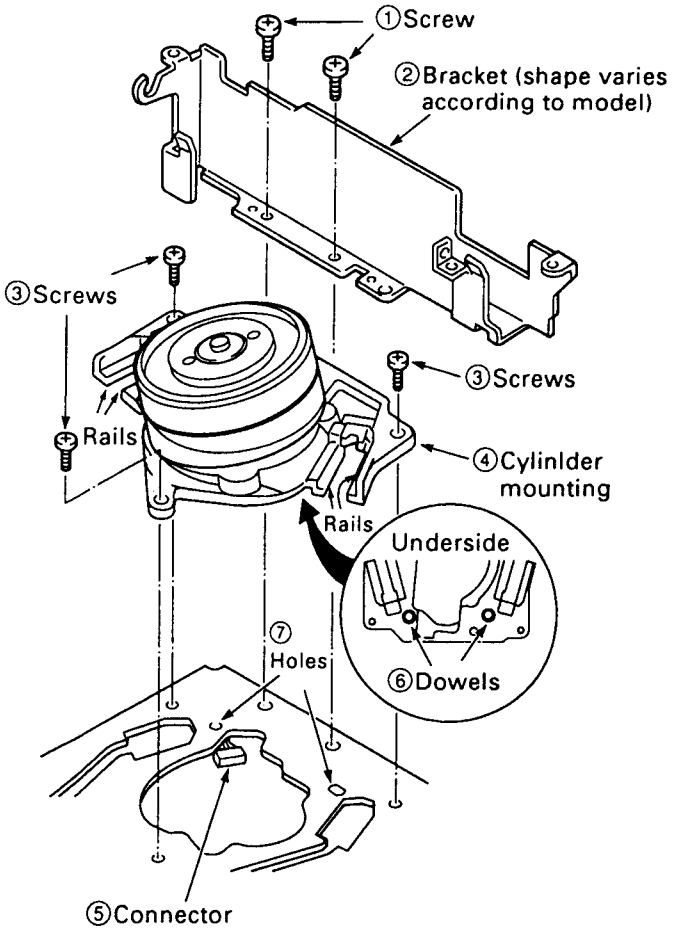



Fig.3-5-6

### 3-5-2. CYLINDER MOTOR (ROTOR AND STATOR) (See Fig.3-5-7)

1) If you have removed the mechanism unit, remove the screw ① and remove the cylinder earth assembly ②.
2) Remove the two screws ③, the rotor ④ and the spacer ⑧.
3) Remove the three screws ⑤ and the stator ⑥.

**ASSEMBLY NOTES:**

1. When fitting the rotor ④, align the long hole ⑨ -beside the triangular mark on the rotor ④ - with the hole ⑩ in the rotor disk.
2. When fitting the screws ③ and ⑤, use the torque gauge screwdriver (VHJ-0014). give the screws a tightening torque of 3 kg/cm.
3. Align the dowel ⑪ on the cylinder earth assembly ② with the hole ⑫ in the chassis.
4. If you have removed the cylinder unit, after assembly, do the tape path adjustment as instructed in section 4-3, and do the switching position adjustment of the servo circuit.

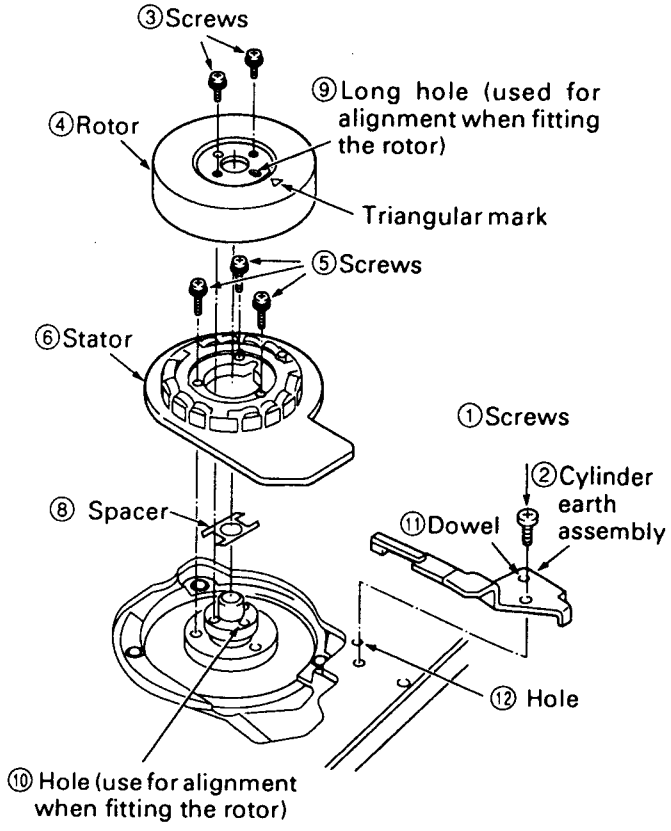



Fig.3-5-7

### 3-5-3. CYLINDER ASSEMBLY (See Fig.3-5-8)

1) Remove the three screws ① and the cylinder assembly ②.

### ASSEMBLY NOTES:

1. Be careful not to scratch or soil the top of the cylinder. After fitting the cylinder, clean the surface.
2. Align the cylinder assembly ② with the two dowels ④ on the cylinder mounting ③.
3. After fitting the cylinder assembly, do the tape path adjustment as instructed in section 4-3 and do the switching position adjustment of the servo circuit.

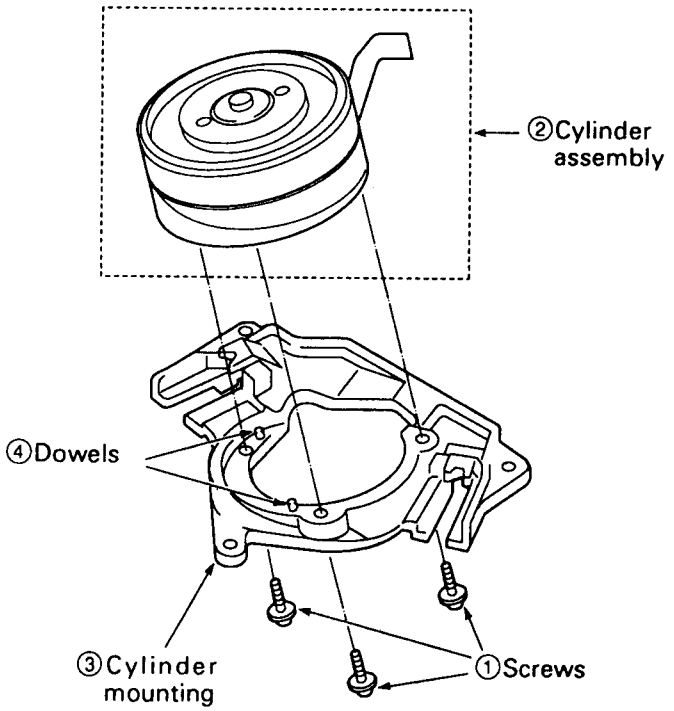



Fig.3-5-8

## 3-6. FE HEAD AND ACE HEAD

### 3-6-1. AUDIO R/P HEAD ASSEMBLY (ACE HEAD) (See Fig.3-6-1)

1) Unplug the connector from the audio R/P head assembly (ACE head).
2) Remove the two screws ① and the audio R/P head assembly (ACE head) ②.

**ASSEMBLY NOTES:**

1. Align the hole ③ on the audio R/P head assembly (ACE head) with the pin ④ on the chassis unit.
2. After assembly, check that the clamp ⑤ on the cleaner roller assembly has snapped into the mounting of the audio R/P head assembly (ACE head) ②.
3. After assembly, clean the surface of the head with a soft cloth or chamois.
4. After assembly, refer to section 4-3, and adjust the head hight, the azimuth and the tracking (X) position.

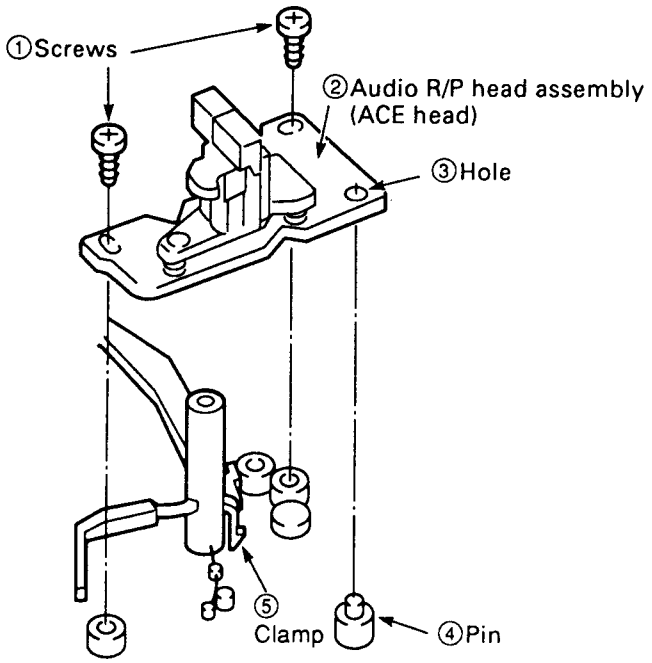



Fig.3-6-1

### 3-6-2. FULL ERASE HEAD (See Fig.3-6-2)

1) Unplug the connector from the full erase head ①.
2) Remove the screw ② and the full erase head ①.

**ASSEMBLY NOTE:**

1. After assembly, clean the full erase head ①.

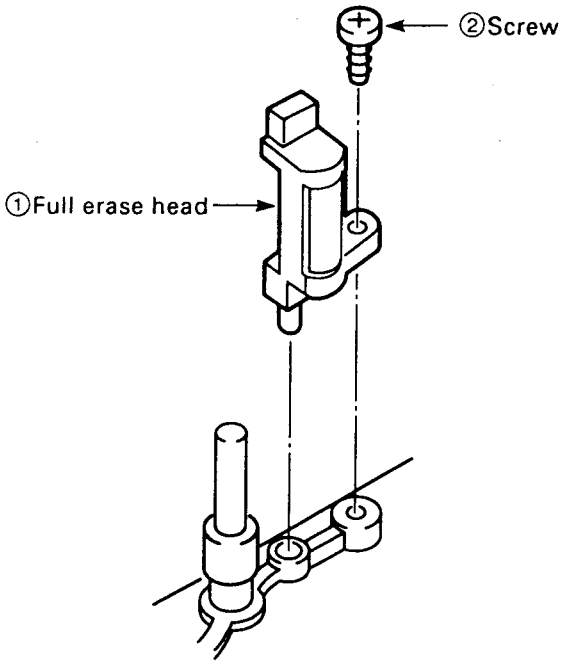



Fig.3-6-2

## 3-7. CAPSTAN MOTOR

### 3-7-1. CAPSTAN MOTOR (See Fig.3-7-1)

1) Refer to section 3-2, then remove the mechanism unit.
2) After unplugging the flat cable from the harness mounting ①, remove the two screws ②, then remove the harness mounting ①.
3) Remove the reel belt ③.
4) Unplug the connector ④.
5) Remove the three screws ⑤ and the capstan motor ⑥.

**ASSEMBLY NOTES:**

1. When fitting the three screws ⑤, use the torque gauge screwdriver (VHJ-0014). Give the screws a tightening torque of 3.5 kg/cm.
2. After assembly, clean the capstan shaft with a soft cloth or chamois.

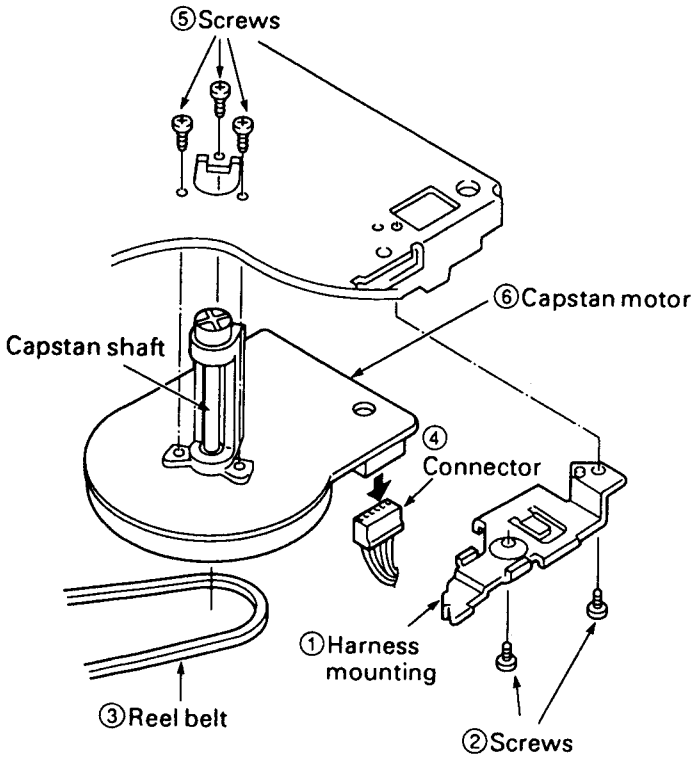



Fig.3-7-1

### 3-7-2. CAPSTAN BRAKE ASSEMBLY (See Fig.3-7-2)

1) Remove the spring ①.
2) Remove the clamp ②, then remove the capstan brake assembly ③.

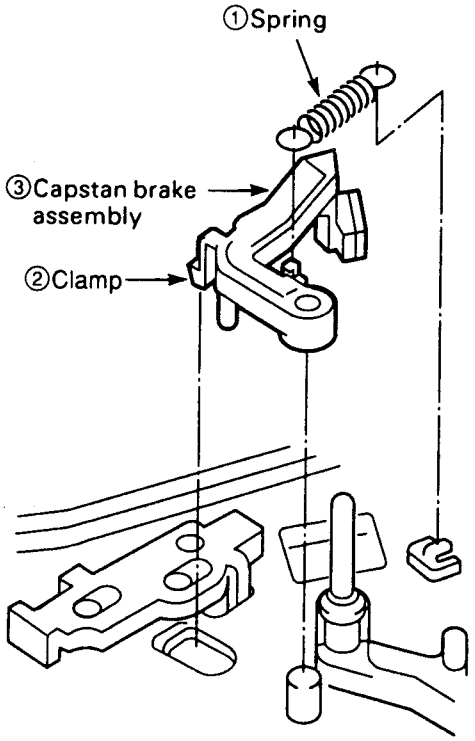



Fig.3-7-2

## 3-8. LOADING MOTOR ASSEMBLY AND WORM GEAR ASSEMBLY (See Fig.3-8-1)

1) Refer to section 3-2 and remove the mechanism unit.
2) Remove the soldering on the lead wires② of the loading motor assembly from the MC-1 PWB assembly. When you do this, be careful not to let the soldering iron touch any other parts.
3) Press the clamp③, and remove the loading motor assembly① and the damper④. Be careful not to exert too much force on the clamp③.
4) Remove the worm gear assembly⑤. To maintain performance, do not dis-assemble the worm gear assembly⑤.

**ASSEMBLY NOTES:**

1. Apply grease (SGL-505) to the teeth of the worm gear assembly.
2. Check that the clamps③ and⑥ are securing the loading motor assembly.
3. Check the polarity of the lead wires ② (the orange wire is the positive terminal, and the gray wire is the negative terminal). After soldering the lead wires②, adjust them so that they do not touch the friction gear assembly.

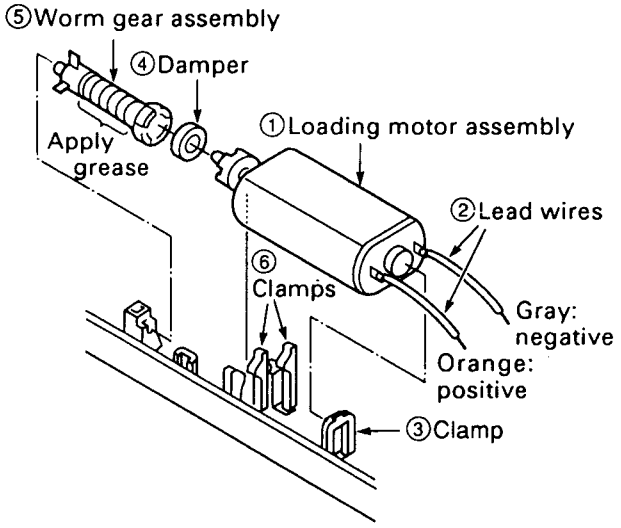



Fig.3-8-1

## 3-9. PINCH ROLLER PRESSURE MECHANISM

### 3-9-1. PINCH ROLLER LEVER ASSEMBLY (See Fig.3-9-1)

1) Remove the clamp ①, then remove the pinch lift mounting②.
2) Remove the spring ③, then remove the pinch roller lever assembly④ off the pinch lift mounting②. Before you do this, align the Indentation⑤ on the pinch roller lever assembly④ with the clamp⑥ on the pinch lift mounting②.

**ASSEMBLY NOTE:**

1. Be careful to keep the surface of the pinch roller free of dust and dirt.

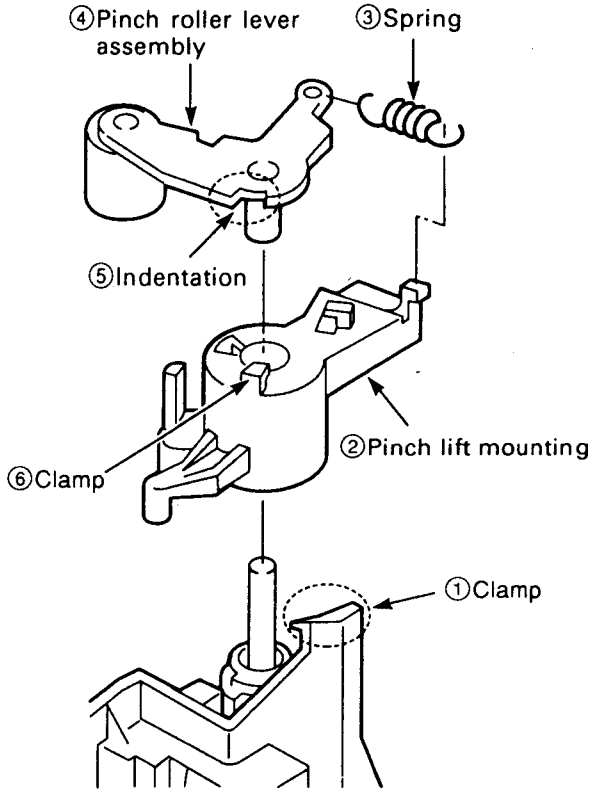



Fig.3-9-1

### 3-9-2. PINCH LIFT CAM AND PINCH CAM GEAR (See Figs.3-9-2 and 3-9-3)

1) Refer to section 3-2 and remove the mechanism unit. When you do this, make sure the mechanism is in EJECT mode.
2) Refer to section 3-9-1 and remove the pinch roller lever assembly.
3) After removing the screw ①, undo the three clamps ②, then remove the opener mounting ③.
4) Remove the clamp ④ and the pinch lift cam ⑤.
5) Remove the pinch cam gear ⑥.

### ASSEMBLY NOTES:

1. Apply grease (SGL-505) around the shaft ⑦, all over the teeth Ⓑ of the pinch cam gear ⑥, all over the teeth of the pinch lift cam ⑤, all over the cam grooves Ⓐ, and all over the "V Part Ⓒ" of the opener mounting ③. Apply grease (EM-L30LG) to the outside of the shaft ⑧ and all over the top cam Ⓓ of the pinch cam gear ⑥.
2. Check that the positioning mark ⑩ on the mode switch ⑨ is aligned with the arrow ⑪ on the MC-1 PWB assembly, as shown in Fig.3-9-3. Then align the triangular mark ⑫ on the pinch cam gear ⑥ with the arrow ⑪ on the MC-1 PWB assembly. After that, align the round hole ⑬ on the pinch lift cam ⑤ with the indentation ⑭ on the pinch cam gear ⑥.
   If you have carried out the above alignments and the pinch roller will still not move up and down or perform the pressing movement correctly, refer to section 3-15 and check the alignment of the gear wheels 1 and 2, the main cam, and the mode switch.

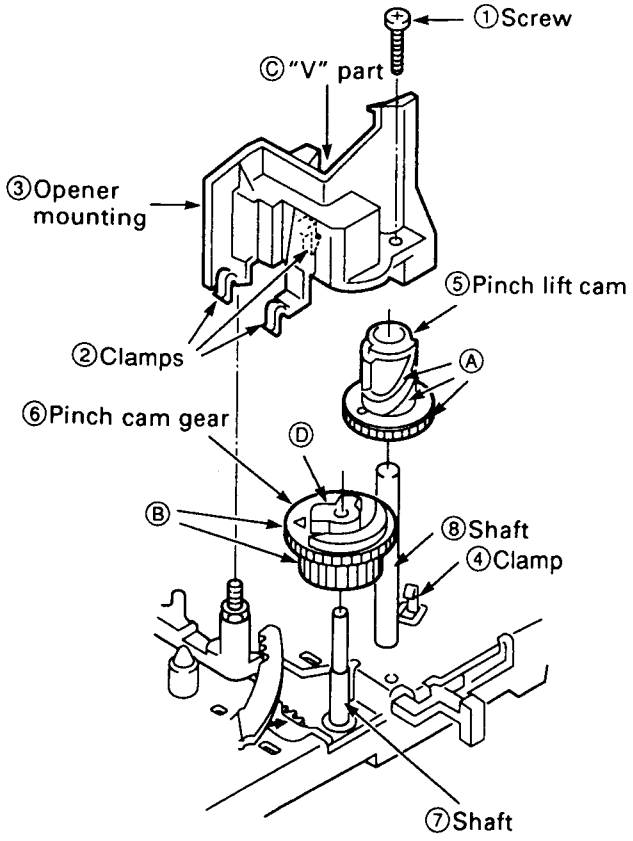



Fig.3-9-2

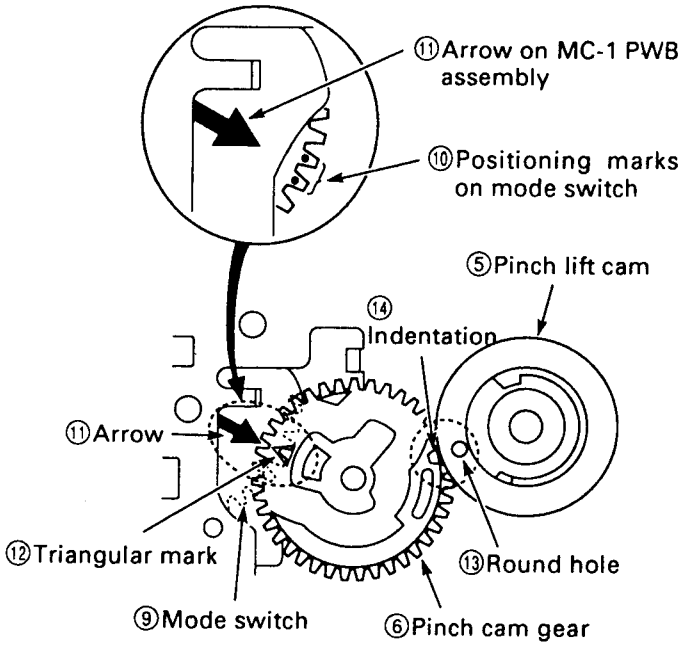



Fig.3-9-3

## 3-10. REWIND LEVER ASSEMBLY, L GUIDE LEVER ASSEMBLY AND LOAD LEVER ASSEMBLY (See Figs.3-10-1 and 3-10-2)

1) Refer to section 3-3 and remove the cassette mechanism assembly.
2) Refer to sections 3-9-1 and 3-9-2, then remove the pinch roller lever assembly and the opener mounting.
3) Remove the rewind spring ① (See Fig.3-10-1).
4) Remove the two clamps ② and the rewind lever assembly ③ (See Fig.3-10-1).
5) After removing the washer ④, remove the L guide act lever assembly ⑤ (See Fig.3-10-2).
6) Remove the special nut ⑥, then remove the load lever assembly ⑦ and the L guide lever spring ⑧ (See Fig.3-10-2).

**ASSEMBLY NOTES:**

1) Apply grease (SGL-505) to the toothed area Ⓐ of the L guide act lever assembly ⑤ and around the shafts ⑨ and ⑩.
2) Refer to section 4-3 and adjust the height of the load lever assembly.
3) Hook the L guide lever spring ⑧ into the stopper ⑬ and load lever assembly ⑦ shown in Fig. A.
4) Put the pin ⑪ of the L guide act lever assembly into the cam groove ⑫ of the crescent slide.

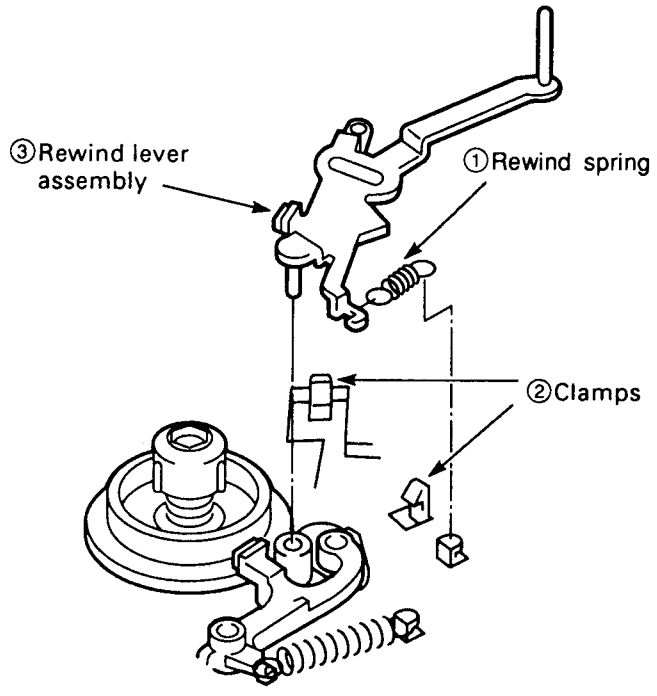



Fig.3-10-1

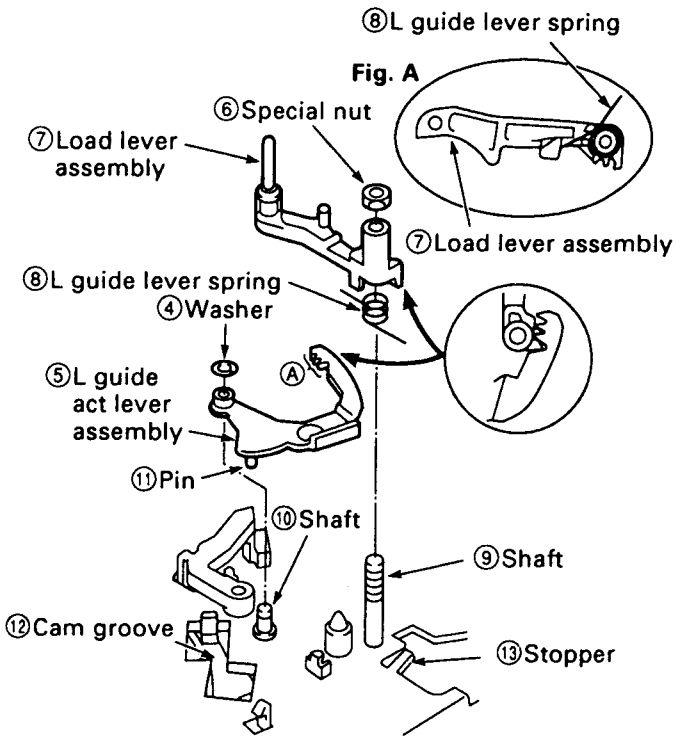



Fig.3-10-2

## 3-11. BT LEVER ASSEMBLY (See Fig.3-11-1)

1) Refer to section 3-2 and remove the mechanism unit.
2) Refer to section 3-3-1 and remove the cassette mechanism assembly.
3) Remove the BT spring ①.
4) Remove the clamp ② on the underside of the mechanism chassis, then remove the BT lever assembly ③.
5) Remove the clamp ⑤ on the band brake assembly ④. Then, as shown in Fig. A, align the other end of the band brake assembly with the protruding parts of the BT lever assembly ③ before removing it.

### ASSEMBLY NOTES:

1. When fitting the BT lever assembly ③, be careful not to bend the stopper ⑥ or the S incline mounting assembly ⑦ out of shape by knocking it against them.
2. Hook the long hook of the BT spring ① into the BT lever assembly ③, as shown in Fig. B.
3. After assembly, make sure that the mountings on both ends of the band brake assembly ④ are positioned as shown in Fig. C.
4. After assembly, refer to section 4-2-1, and make the appropriate adjustment.

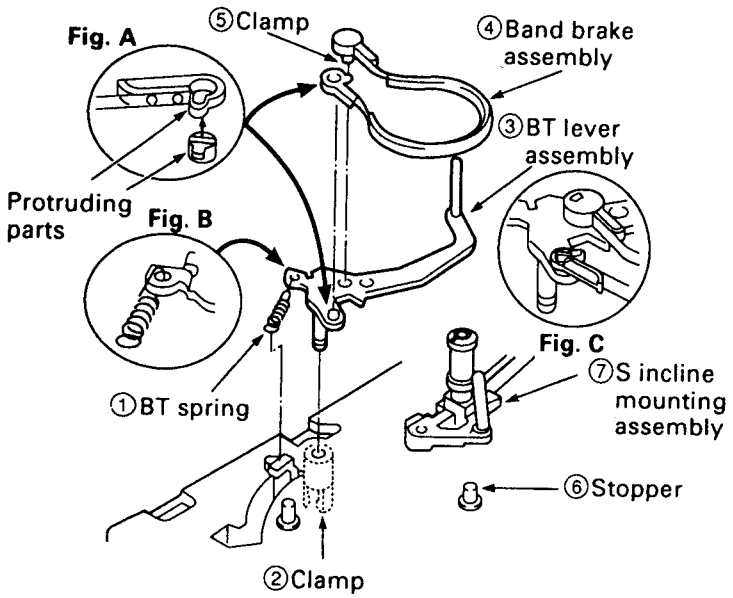



Fig.3-11-1

## 3-12. REEL DRIVE MECHANISM

### 3-12-1. REEL BELT (See Fig.3-12-1)

1) Refer to section 3-2 and remove the mechanism unit.
2) Remove the screws ① and ②, then remove the reel belt mounting ③ and the crescent mounting ④.
3) Remove the reel belt ⑤.

### ASSEMBLY NOTES:

1. Be careful to keep the reel belt ⑤ free of grease.
2. After assembly, check that the two bosses ⑥ on the reel belt mounting ③ are not touching the reel belt ⑤.

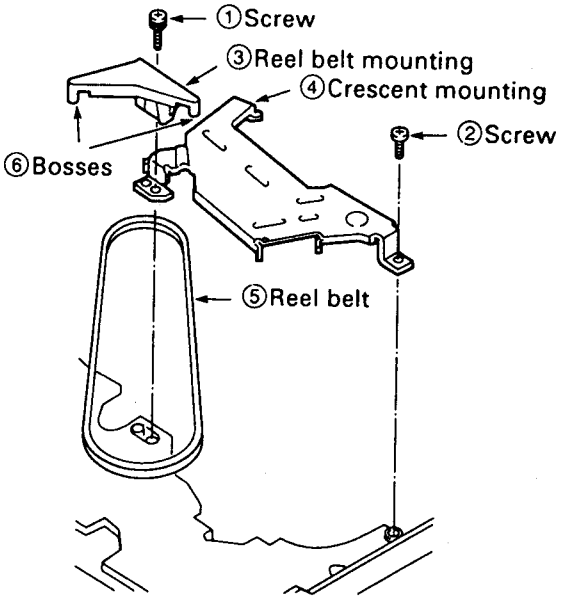



Fig.3-12-1

### 3-12-2. REEL PULLEY, FRICTION GEAR ASSEMBLY AND CLUTCH CHANGE LEVER (See Fig.3-12-2)

1) Refer to section 3-2 and remove the mechanism unit.
2) Remove the reel belt ① from the reel pulley ②.
3) Take off the washer ③ and remove the reel pulley ②.
4) Take off the washer ④ and remove the friction gear assembly ⑤.
5) Refer to section 3-12-1 and remove the reel belt mounting.
6) Remove the clutch change spring ⑥.
7) remove the clamp ⑦ gripping the top of the mechanism chassis, then remove the clutch change lever ⑧.

**ASSEMBLY NOTES:**

1. After cleaning the shafts ⑨ and ⑩, apply a drop of oil (NT-68) to each.
2. Be careful not to get any grease on the reel belt ①.

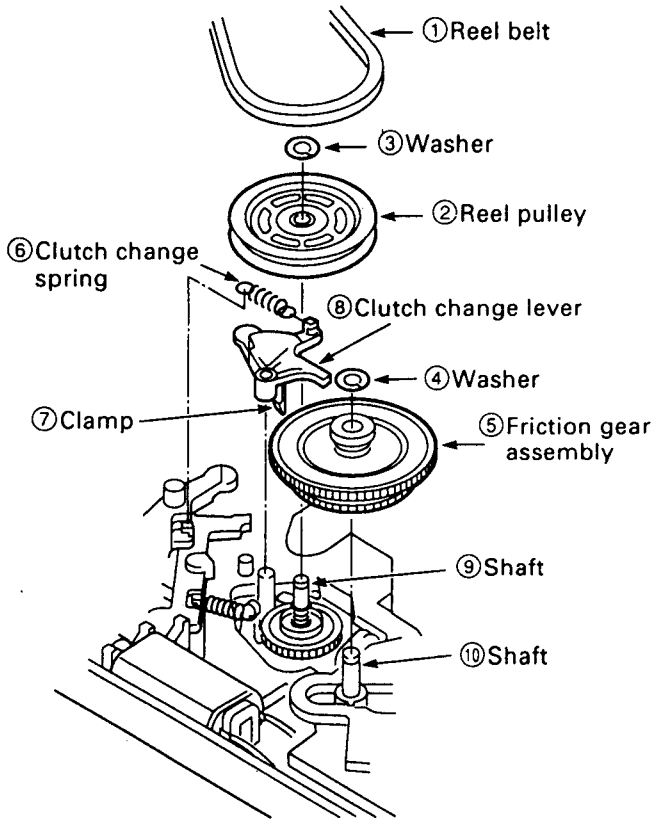



Fig.3-12-2

### 3-12-3. CLUTCH MOUNTING ASSEMBLY (See Fig.3-12-3)

1) Refer to section 3-3-1 and remove the cassette mechanism assembly.
2) Refer to section 3-12-2 and remove the reel pulley.
3) Remove the two screws ①, then remove the clutch mounting assembly ②.

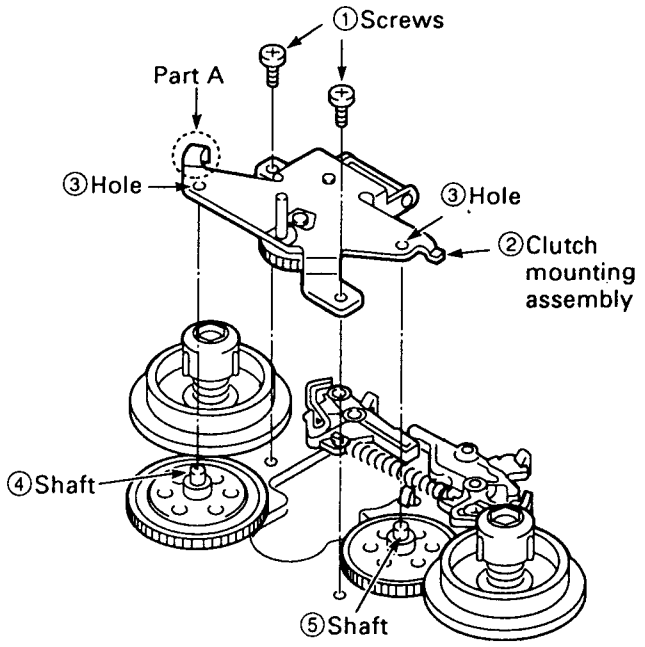



Fig.3-12-3

**ASSEMBLY NOTES:**

1. Align the two holes ③ with the shafts ④ and ⑤. Be careful not to press part A of the clutch mounting assembly ② against the band brake assembly.
2. After assembly, make sure that the clamp on the clutch change lever has snapped into the chassis.

### 3-12-4. S SOFT LEVER, SUPPLY REEL ASSEMBLY AND S REEL GEAR (See Fig.3-12-4)

1) Remove the S soft spring ①.
2) Remove the clamp ② ,then remove the S soft lever ③.
3) Refer to section 3-12-3 and remove the clutch mounting assembly.
4) Refer to section 3-11 and remove the band brake assembly, then remove the supply reel assembly ④ and the S reel gear ⑤.

### ASSEMBLY NOTES:

1. After cleaning the shafts ⑥ and ⑦, apply a drop of oil (NT-68) to each.
2. After assembly, clean the side of the supply reel assembly ④.

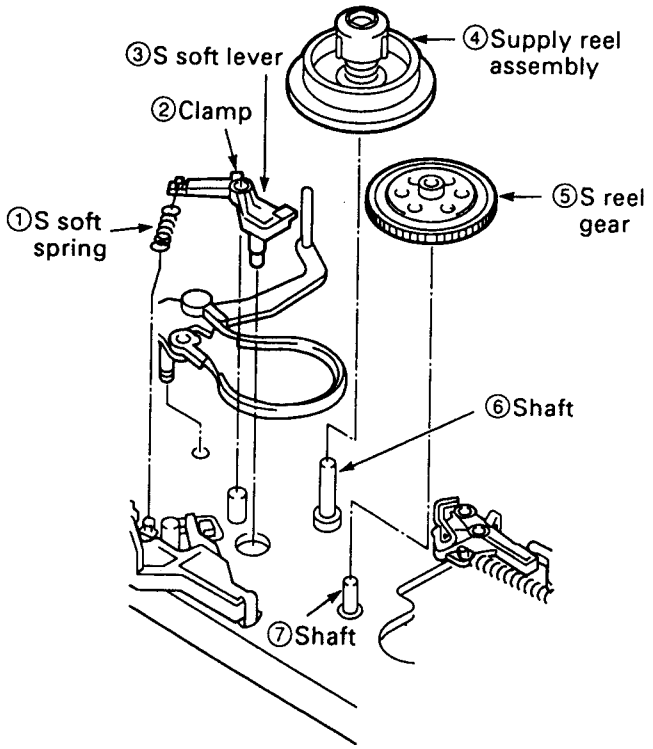



Fig.3-12-4

### 3-12-5. T SOFT BRAKE ASSEMBLY, TAKE UP REEL ASSEMBLY, T REEL GEAR (See Fig.3-12-5)

1) Refer to section 3-10 and remove the rewind lever assembly.
2) Remove the T soft spring ①.
3) Remove the clamp ② , then remove the T soft brake assembly ③.
4) Refer to section 3-12-3 and remove the clutch mounting assembly.
5) Pressing the T brake assembly ④ in the direction of the arrow, remove the take up reel assembly ⑤ and the T reel gear ⑥.

### ASSEMBLY NOTE:

1. After cleaning the shafts ⑦ and ⑧, apply a drop of oil (NT-68) to each.

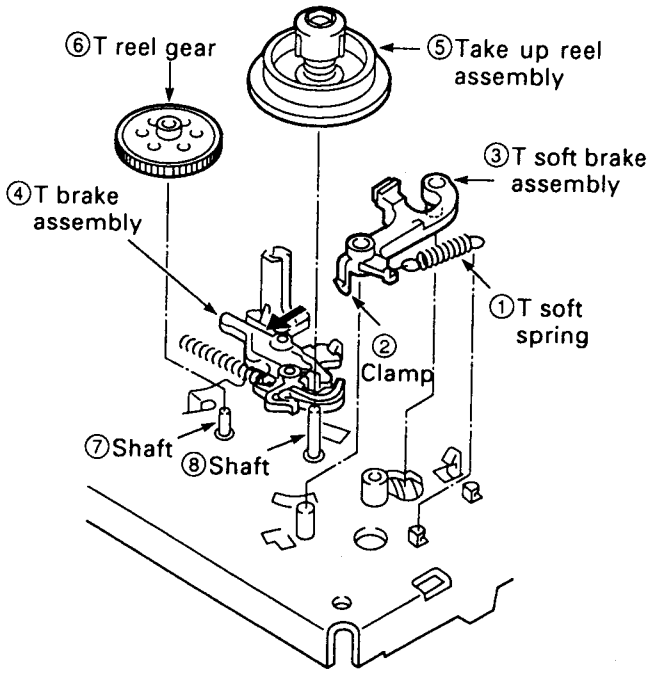



Fig.3-12-5

## 3-13. BRAKES

### 3-13-1. S BRAKE ASSEMBLY, T BRAKE ASSEMBLY, T BRAKE ACT SLIDE (See Fig.3-13-1)

1) Refer to section 3-3-1 and remove the cassette mechanism assembly.
2) Remove the two clamps ①, then remove the T brake act slide ②. (Note: You can remove the S brake assembly ⑦ and the T brake assembly ⑤ without removing the T brake act slide ②.)
3) Remove the brake spring ③.
4) Remove the two clamps ④ simultaneously, then remove the T brake assembly ⑤.
5) Remove the clamp ⑥, then remove the S brake assembly ⑦.

**ASSEMBLY NOTES:**

1. Apply grease (SGL-505) to the shafts ⑧ and ⑨.
2. When fitting the T brake act slide ②, align the mark ⑩ with the shaft ⑪.

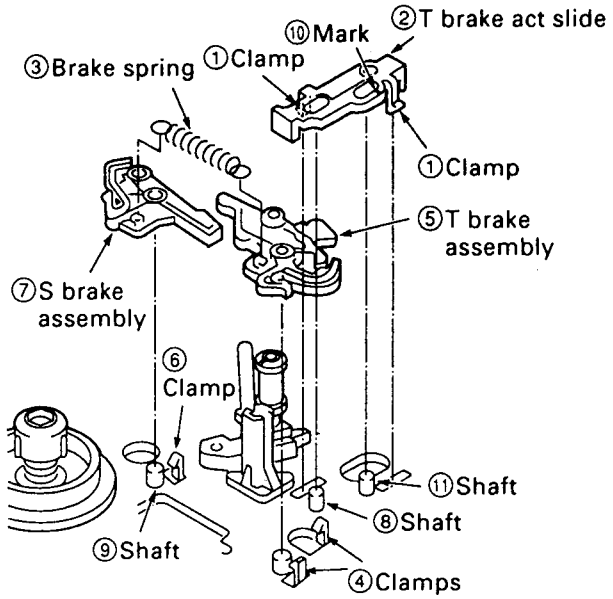



Fig.3-13-1

### 3-13-2. BRAKE CONTROL LEVER AND BRAKE ACT LEVER ASSEMBLY (See Fig.3-13-2)

1) Refer to section 3-2 and remove the mechanism unit.
2) Refer to section 3-15 and remove the wheel gear 2.
3) Refer to sections 3-12-1, 3-12-2 and remove the reel belt and the reel pulley.
4) Remove the clamp ① ,then remove the wheel gear 1 ②.
5) Remove the clutch change spring ③.
6) Remove the clamps ④ and ⑤, then remove the brake control lever ⑥. Remove the clamp ④ on the topside of the mechanism chassis.
7) Remove the brake return spring ⑦.
8) Refer to section 3-8 and remove the worm gear assembly.
9) Remove the clamp ⑧, then remove the brake act lever assembly ⑨. To maintain the performance of the brake act lever assembly ⑨, do not dis-assemble it.

**ASSEMBLY NOTES:**

1. Apply grease (SGL-505) to the shafts ⑩ and ⑪, to the teeth of the wheel gear 1 ②, and to the pin ⑫ of the brake control lever ⑥.
2. Put the pin ⑬ of the brake control lever ⑥ into the cam groove ⑭ of the crescent slide.
3. Before fitting the wheel gear 1 ②, align the hole ⑮ with the hole ⑯ on the mechanism chassis.
4. Refer to section 3-15 and align the wheel gear 2.

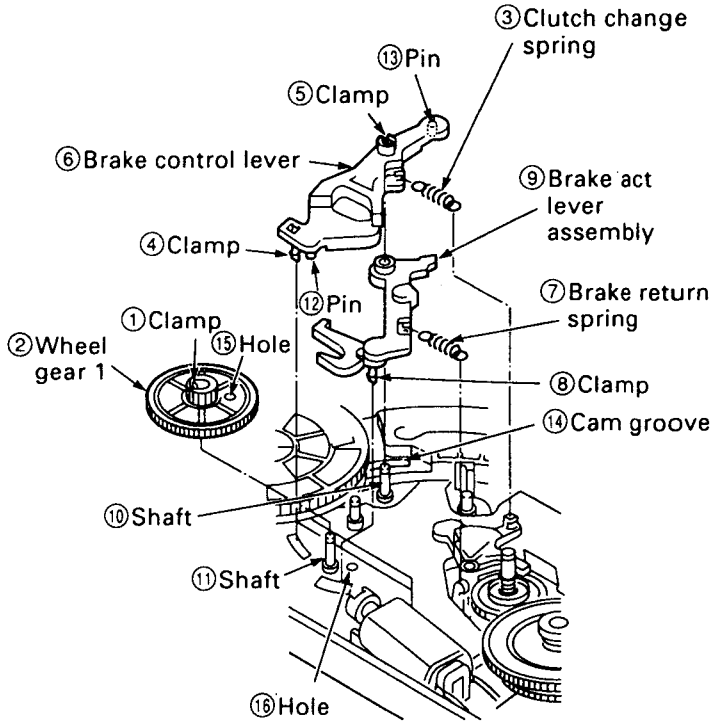



Fig.3-13-2

### 3-13-3. S BRAKE ACT SLIDE AND BT SPRING LEVER ASSEMBLY (See Figs.3-13-3 and 3-13-4)

1) Refer to section 3-16 and remove the crescent slide.
2) Refer to section 3-12-2 and remove the friction gear assembly.
3) Slide the S brake act slide ① in the direction of the arrow Ⓐ, then remove it.
4) Refer to section 3-11 and remove the BT spring.
5) Press the BT spring lever assembly ② until it touches the pin ③, then remove it.

### ASSEMBLY NOTES:

1. Apply grease (SGL-505) to the shaft ④ shown in Fig. 3-13-3, and to the BT spring lever assembly ② and the S brake act slide ① shown in Fig.3-13-4.
2. After mounting the BT spring lever assembly ② on the Shaft ④, hook the BT spring onto the clamp ⑤ and press it until it touches the pin ⑥.
3. Make sure that the clamps ⑦, ⑧ and ⑨ have snapped into the S brake act slide ①. Align the arrow ⑩ on the S brake act slide ① with the arrow ⑪ on the mechanism chassis.

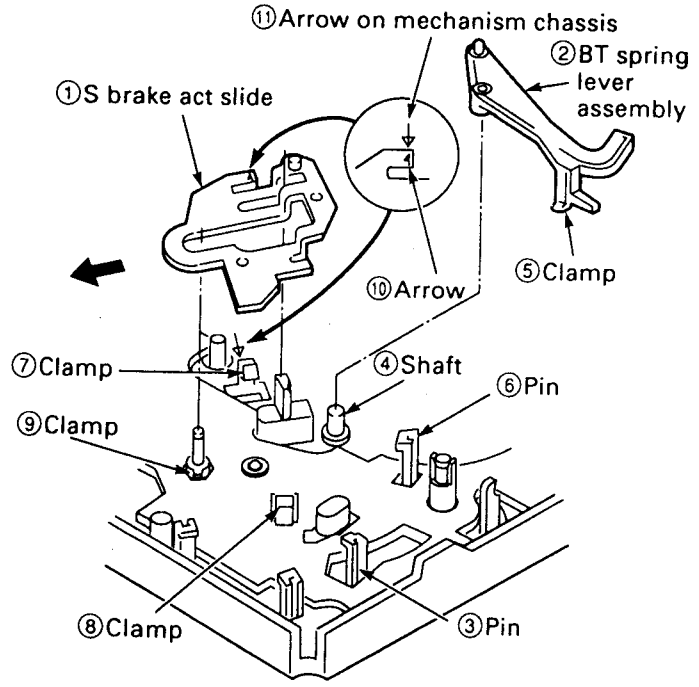



Fig.3-13-3

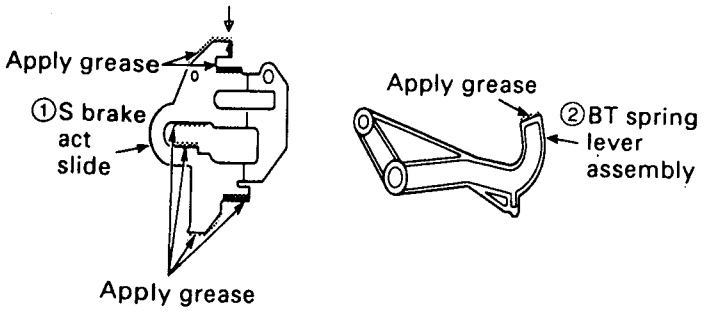



Fig.3-13-4

## 3-14. GUIDES

### 3-14-1. GUIDE ROLLER ASSEMBLY (See Fig.3-14-1)

1) Unscrew the two screws ①. When you do this, be careful not to damage the cylinder or the video head.
2) Remove the two guide roller assemblies ② by unscrewing them anticlockwise.

### ASSEMBLY NOTES:

1. Tighten the two screws ① to a torque of 600 g/cm.
2. After replacing the parts, be sure to clean the guide roller and carry out tape path adjustment as described in section 4-3.

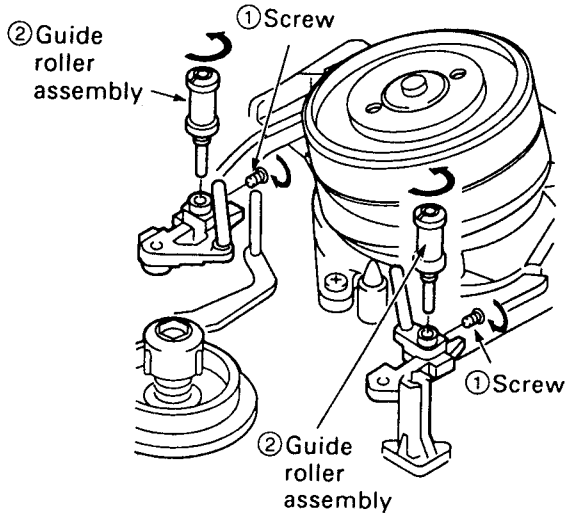


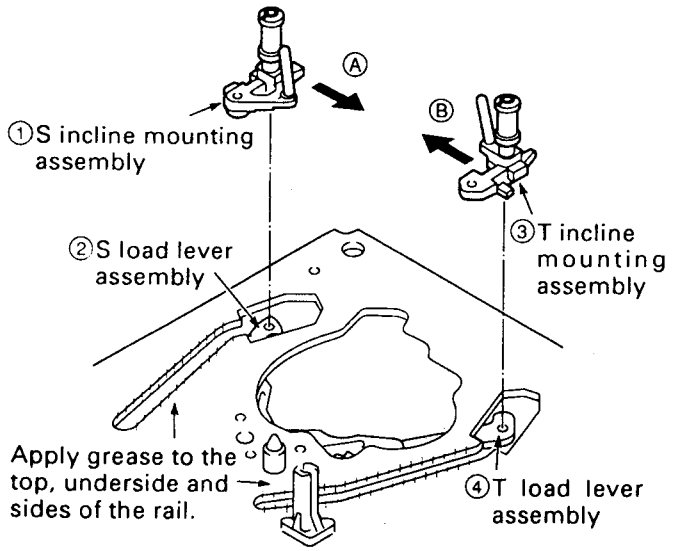

Fig.3-14-1

### 3-14-2. S AND T INCLINE MOUNTING ASSEMBLIES (See Fig.3-14-2)

1) Refer to section 3-2 and remove the mechanism unit.
2) Refer to section 3-5-2 and remove the cylinder unit.
3) Refer to section 3-1 and rotate the loading motor in the PLAY direction until tape loading is completed.
4) Shift the S incline mounting assembly ① slightly, in the direction of the arrow Ⓐ, then remove it from the S load lever assembly ②.
5) Shift the T incline mounting assembly ③ slightly, in the direction of the arrow Ⓑ, then remove it from the T load lever assembly ④.

**ASSEMBLY NOTES:**

1. Apply grease (SGL-505) to the rail (top, underside and sides) on the mechanism chassis.
   If yellow grease has already been applied, there is no need to apply SGL-505.
2. When fitting the S and T incline mounting assemblies ① and ③ into the rail, turn the loading motor manually in the EJECT direction. When tape unloading begins, watch out in case the S and T incline mounting assemblies ① and ③ get caught in the rail.
3. After replacing the parts, clean the cylinder and the roller guide, then adjust the tape path as described in section 4-3.


Ⓐ
Ⓑ
①S incline mounting assembly
②S load lever assembly
③T incline mounting assembly
Apply grease to the top, underside and sides of the rail.
④T load lever assembly

NOTE: If yellow grease has already been applied, there is no need to apply SGL-505.

Fig.3-14-2

## 3-15. WHEEL GEAR 2, MAIN CAM AND MODE SWITCH (See Figs.3-15-1 and 3-15-2)

1) Refer to section 3-2 and remove the mechanism unit. When you do this, make sure the mechanism is in EJECT mode.
2) Refer to section 3-7-1, then remove the flat cable and the harness mounting.
3) Remove the clamp ①, then remove the wheel gear 2 ②.
4) Remove the washer ③, then remove the main cam ④.
5) After unscrewing the screw ⑤, remove the soldering from the terminal of the mode switch ⑥.
6) Remove the clamp ⑦, then remove the mode switch ⑥.

**ASSEMBLY NOTES:**

1. Apply grease (SGL-505) to the shafts ⑧, ⑨ and ⑩, to the teeth of the main cam ④, and to the all over the cam groove of main cam ④.
2. When fitting the mode switch ⑥, align it in ⒶⒷ order as shown in Fig.3-15-2. The alignment of the part Ⓑ is shown in Fig. A. Position the teeth of the mode switch ⑥ so that the sixth tooth space left of part Ⓐ is aligned with the triangular mark on the pinch cam gear ⑪. After aligning part Ⓑ, refer to section 3-9-2 and check the positioning of the mode switch, the pinch cam gear and the pinch lift cam.
3. Beforehand, remove the soldering from the soldered part of the MC-1 PWB assembly, in order to prevent the mode switch ⑥ being warped. Solder the mode switch ⑥ after tightening the screw ⑤ (See Fig. 3-15-1).
4. Align the hole in the crescent slide ⑫ with the hole in the mechanism chassis, as shown at point Ⓖ in Fig.3-15-2 (refer to section 3-16 and see the holes ⑤ and ⑥ in Fig.3-16-1).
5. When fitting the main cam ④, position the mode switch ⑥ and the front rack gear ⑬ as shown at points Ⓒ and Ⓓ respectively in Fig.3-15-2.
6. When fitting the gear wheel 2 ②, position the main cam ④ and the wheel gear 1 ⑭ as shown at points Ⓔ and Ⓕ respectively in Fig.3-15-2.

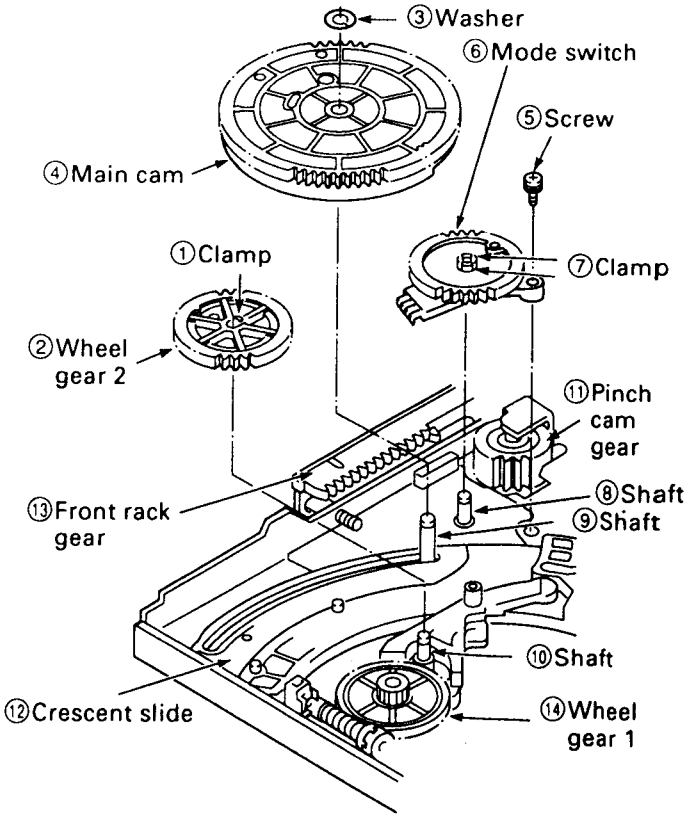



Fig.3-15-1

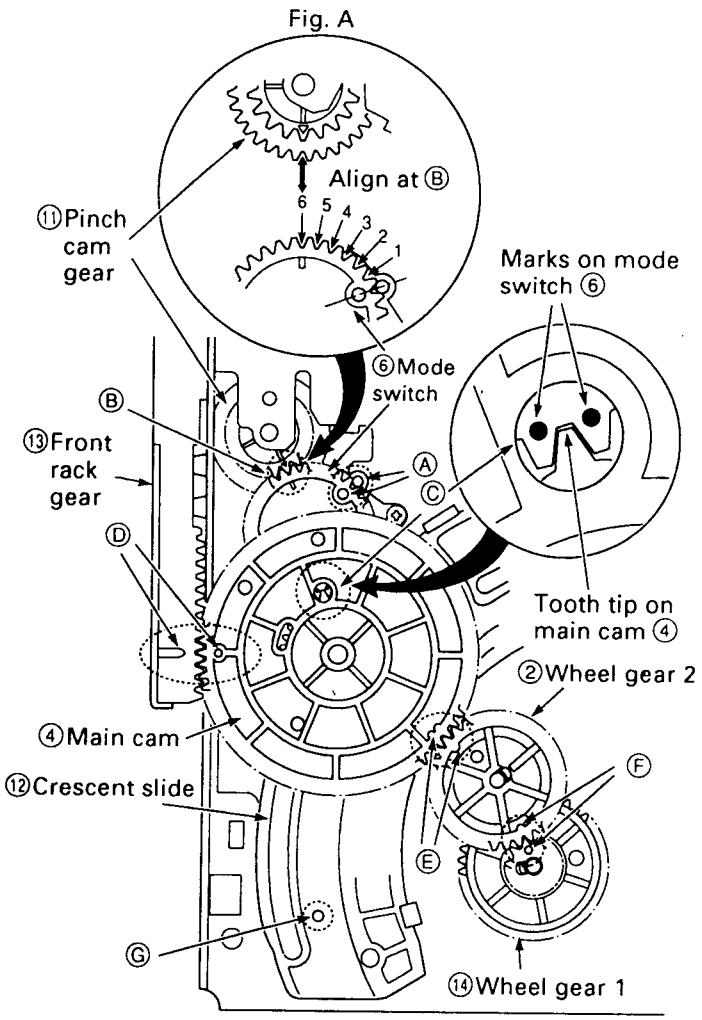



Fig.3-15-2

## 3-16. CRESCENT SLIDE (See Figs.3-16-1 and 3-16-2)

1) Refer to section 3-2 and remove the mechanism unit. When you do this, make sure the mechanism is in EJECT mode.
2) Refer to section 3-3-1 and remove the cassette mechanism assembly.
3) Refer to section 3-7-2 and remove the capstan brake assembly.
4) Refer to section 3-10 and remove the rewind lever assembly.
5) Refer to section 3-12-5 and remove the T soft brake assembly.
6) Refer to section 3-13-1 and remove the T brake act slide.
7) Refer to section 3-12-1 and remove the reel belt mounting, the crescent mounting and the reel belt.
8) Refer to section 3-12-2 and remove the reel pulley.
9) Refer to section 3-15 and remove the wheel gear 2 and the main cam.
10) Refer to section 3-13-2 and remove the wheel gear 1 and the brake control lever.
11) Remove the clamps ① and ② ,then raise the right end of the crescent slide ③ slightly. Slide the crescent slide ③ to the right until it comes away from the clamp ④, then remove it.

### ASSEMBLY NOTES:

1. Apply grease (SGL-505) to the points Ⓐ, Ⓑ, Ⓒ and Ⓓ in Fig.3-16-1, and to the crescent slide ③ shown in Fig.3-16-2.
2. Before fitting the crescent slide ③, refer to section 3-13-3 and align the arrow on the S brake act slide with the arrow on the mechanism chassis. Then refer to Fig.3-17-3 and check that the S load gear and the T load gear have completed tape unloading.
3. When assembling the parts, raise the right side of the crescent slide ③ slightly, and keeping it in this position, slot the left side into the clamp ④, then align thehole ⑤ with the hole ⑥ in the mechanism chassis. When you do this, check that the hole ⑦ is aligned with the pin ⑧ on the BT spring lever assembly, and that the hole ⑨ is aligned with the pin ⑩ on the S brake act slide, before pressing the crescent slide ③ into place. Check that the clamps ① , ② and ④ are engaged.
4. After assembly, check that each lever and each brake is working properly.

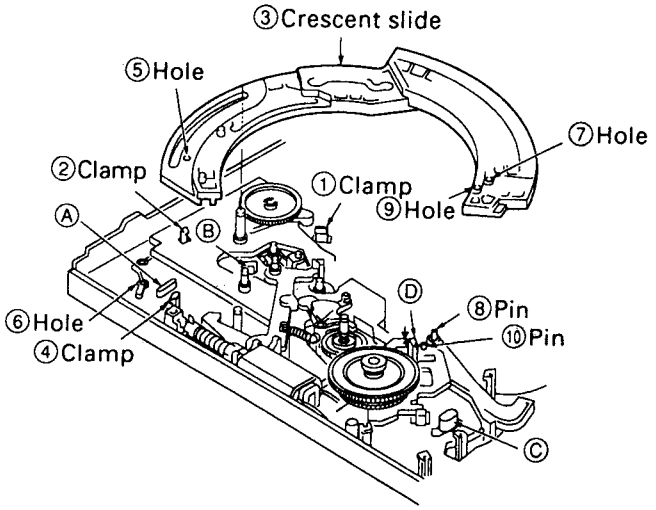



Fig.3-16-1

Apply grease to the areas shown in ▭
• The places marked by dots should be greased particularly generously.

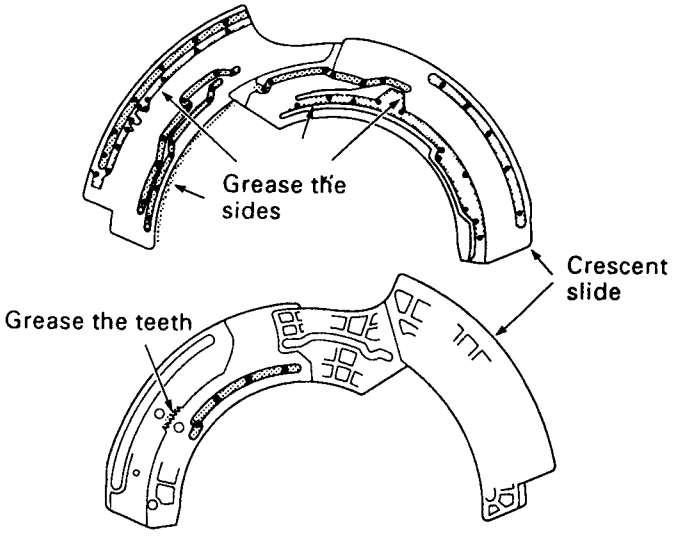



Fig.3-16-2

## 3-17. S LOAD GEAR, T LOAD GEAR, S LOAD LEVER ASSEMBLY AND T LOAD LEVER ASSEMBLY (See Figs.3-17-1, 3-17-2 and 3-17-3)

1) Refer to section 3-16 and remove the crescent slide.
2) Refer to section 3-14-2 and remove the S and T incline mounting assemblies.
3) Remove the clamp ① ,then remove the components: the S load gear ②, the S load spring ③ and the S load lever assembly ④. When you do this, be careful not to damage the clamp ①, which can be damaged easily. Again, be careful when you dis-assemble the components, as the S load spring ③ will spring out.
4) Remove the following components: the T load gear ⑤, the T load spring ⑥, and the T load lever assembly ⑦. Be careful when you dis-assemble the components, as the T load spring ⑥ will spring out.

### ASSEMBLY NOTES:

1. Apply grease (SGL-505) to the shafts ⑧, ⑨ and parts A shown in Fig. 3-17-1. Then apply grease (SGL-505) to the parts shown in Fig. 3-17-2.
2. When fitting the S load gear ② and the T load gear ⑤ align them in the tape-loaded state, as shown in Fig. A in Fig.3-17-3. Again, after completing tape-unloading on these gears, check that they are positioned as shown in Fig. B in Fig.3-17-3, then refer to section 3-14-2 and fit the S and T incline mounting assemblies.

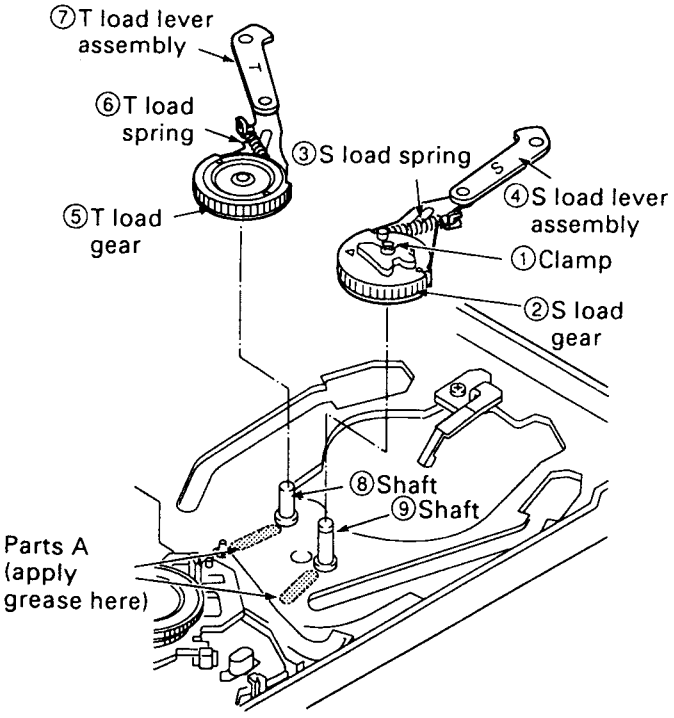
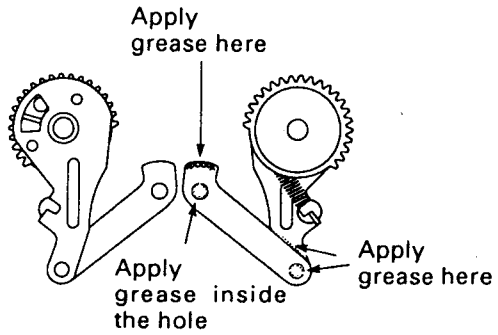



Fig.3-17-1

(T side)




(S side)

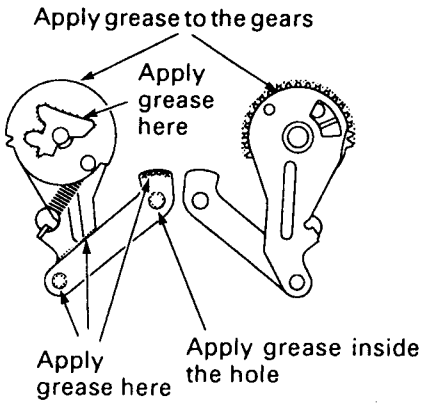



Fig.3-17-2

Fig. A: When tape loading is complete

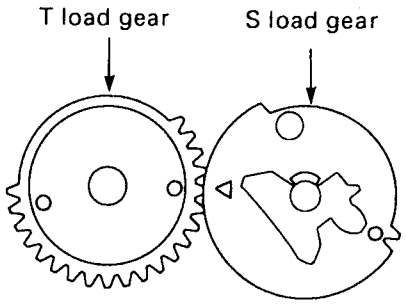



Fig. B: When tape unloading is complete

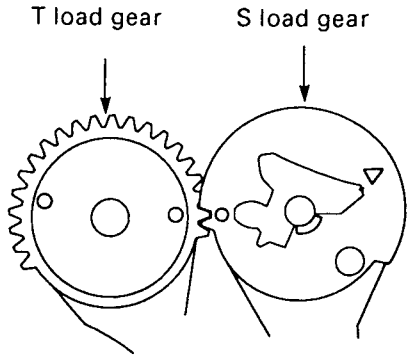



Fig.3-17-3

## 3-18. TAPE SENSORS, REEL SENSOR AND EP SW LEVER

### 3-18-1 TAPE TOP SENSOR AND TAPE END SENSOR (See Fig.3-18-1)

1) Refer to section 3-2 and remove the mechanism unit.
2) Refer to section 3-3-1 and remove the cassette mechanism assembly.
3) Remove the soldering from the MC-1 PWB assembly, then remove the photo diodes ①, ② and the LED ③. When removing the photo diode ② on the tape top sensor side, refer to section 3-15 and remove the main cam.

**ASSEMBLY NOTES:**

1. Fit the photo diodes ① and ② so that their photo-receptors to face the LED ③, as shown in Fig.3-18-1. Align the cuts in the LED ③ and the holder ④. Push the photo diodes ①, ② and the LED ③ as far down as they will go, so that they do not protrude above the top of their holders.
2. Do the soldering quickly.

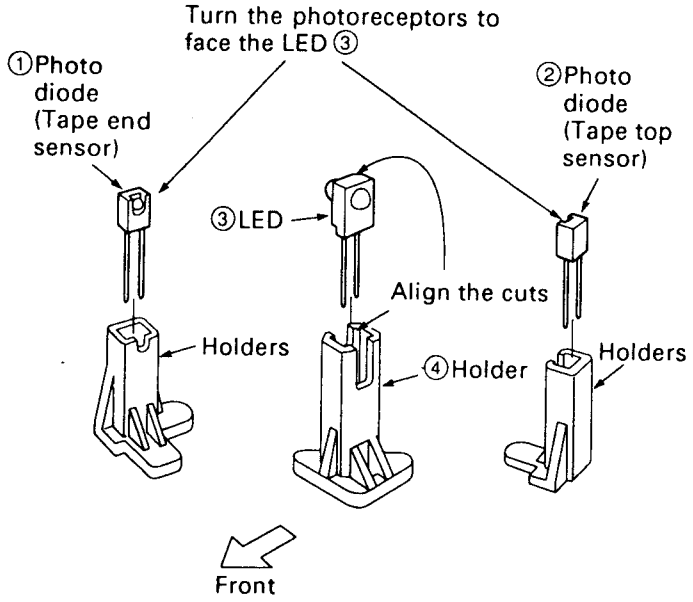



Fig.3-18-1

### 3-18-2. REEL SENSOR (See Fig.3-18-2)

1) Refer to sections 3-10-1, 3-12-3 and 3-12-5, then remove the rewind lever assembly, the clutch mounting assembly, the T soft brake assembly and the take up reel assembly.
2) Refer to section 3-13-2 and remove the wheel gear 2, the wheel gear 1, and the brake control lever.
3) Remove the soldering from the MC-1 PWB assembly, then remove the photo diode (reel sensor) ①.

**ASSEMBLY NOTES:**

1. When assembling the parts, align the cut on the photo diode (reel sensor) ① with the protrusion on the mechanism chassis ②.
2. Do the soldering quickly.

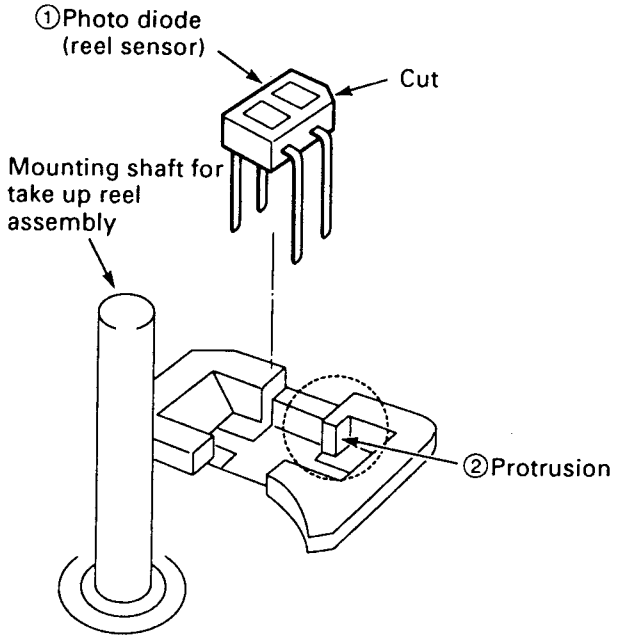



Fig.3-18-2

### 3-18-3. EP SWITCH LEVER (See Fig.3-18-3)

1) Refer to section 3-3-1 and remove the cassette mechanism assembly.
2) Remove the EP switch spring ①.
3) Remove the clamp ②, then remove the EP switch lever ③.

**ASSEMBLY NOTES:**

1. Apply grease (SGL-505) to the protrusion ④ onthe back of the EP switch lever ③.
2. After fitting the cassette mechanism assembly, check that in EJECT mode, the EP switch lever ③ does not touch the EP switch ⑤.

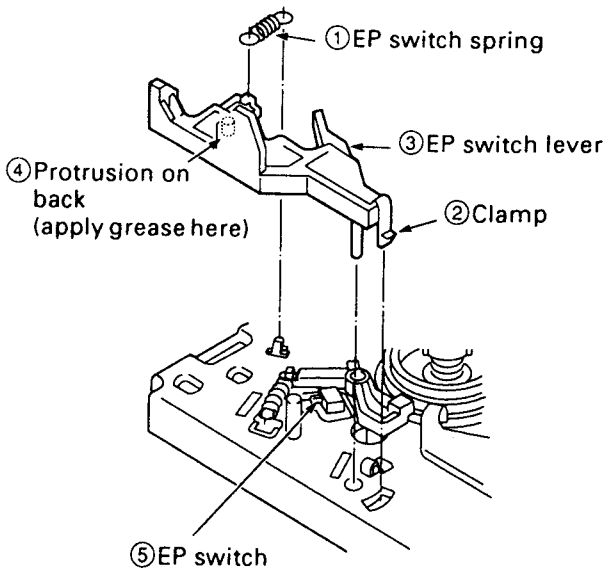



Fig.3-18-3

## 7-4. MECHANISM CHECK AND ADJUSTMENT

### 4-1. REEL TABLE TORQUE CHECK

1) With the power switch turned OFF, stick black vinyl tape over the photo diodes of the tape sensors. Then turn the power switch ON. Front loading will begin. Refer to section 3-2 and Fig.3-2-2, and release the locks of the tray lock lever and the lid opener lever.

NOTES:

1. The measurements must be taken without any incandescent light or daylight.
2. If the mechanism cannot be put into PLAY, FF or REW mode by the method described in 1) above, make a dummy cassette tape, as shown in Fig.4-1-2. The dummy cassette tape is made as follows: Unscrew the five screws on the underside, remove the reels, leaf springs and other parts on the supply and take up sides, make holes in the upper surface as wide as the reel diameter, then assemble the parts.

2) Put the mechanism into REW mode, wait at least 10 seconds, then measure the torque value of the reel table on the supply side. It should be at least 600 g/cm. Take the measurement with the torque gauge and torque gauge adapter held in position in your hand (lock torque).
While taking the measurement, rotate the reel table (take up reel assembly) on the take up side with your hand so that the reel sensor does not respond.

3) After switching to FF mode, wait for at least 10 seconds and then measure the torque value of the reel table on the take up side. It should be at least 600g/cm (lock torque).

4) After switching to PLAY mode, wait for at least 10 seconds and then measure the torque value of the reel table on the take up side. It should be between 80 and 140g/cm (lock torque).

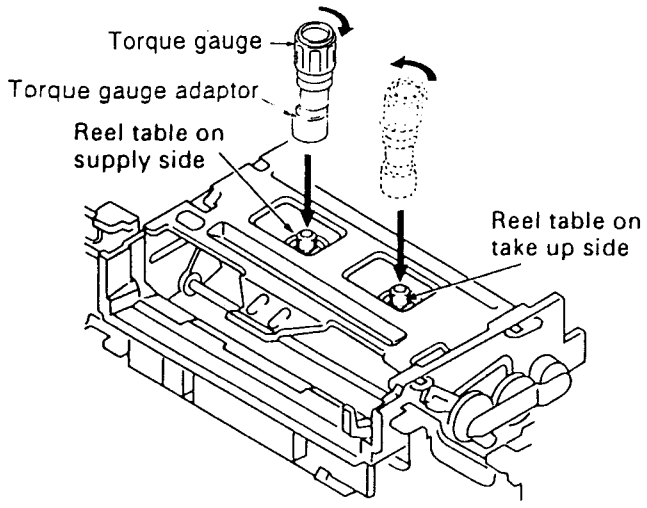



Fig.4-1-1

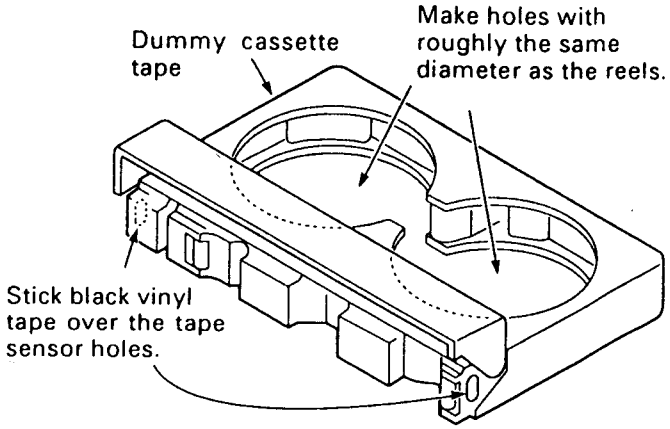

Dummy cassette tape
Make holes with roughly the same diameter as the reels.
Stick black vinyl tape over the tape sensor holes.

Fig.4-1-2

### 4-2. ADJUSTING THE BT LEVER ASSEMBLY POSITION AND CHECKING THE BACK TENSION TORQUE IN PLAY MODE

#### 4-2-1. BT LEVER POLE POSITION ADJUSTMENT (See Fig.4-2-1)

1) Without loading a cassette tape, put the mechanism into PLAY mode (turn the power switch OFF).
2) Adjust point Ⓐ on the band brake assembly by rotating it so that the tip of the BT lever assembly is aligned with the line on the left side of the mechanism chassis.
3) Refer to section 4-2-2 and check that the back tension torque is between 30 and 50g/cm.

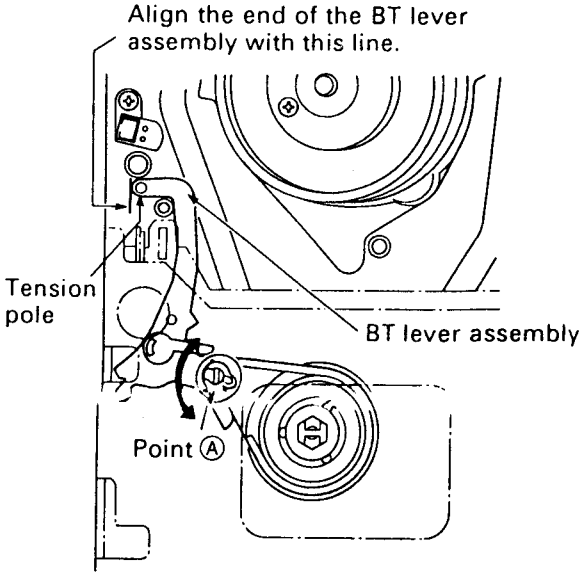



Fig.4-2-1

#### 4-2-2. CHECKING THE BACK TENSION TORQUE PLAY MODE

1) Mount the cassette torque (VHT-063S) and switch to PLAY mode.
2) Check that the back tension torque is between 30 and 50g/cm.

## 4-3. TAPE PATH ADJUSTMENT

In normal circumstances, the tape path system does not need to be adjusted. However, after removing or replacing one of the parts shown in Fig.4-3-1, you should check and adjust the tape path. The adjustment of the tape path is carried out while monitoring the envelope waveform of the video head output, using an oscilloscope. To make sure that the tape drawn off the reel runs freely and without excessive tension along all the tape guides and cylinders (drums), it is also important to check each tape guide by eye.

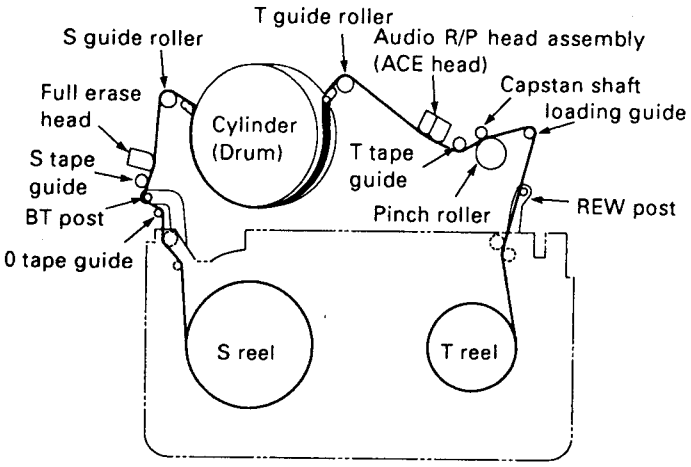



Fig.4-3-1

### 4-3-1. ADJUSTMENT PROCEDURE

1. Alignment tape or blank cassette tape, according to the transmission system of the VCR you are repairing.
2. Clean the tape guides, the cylinder (drum), the capstan Shaft, the audio R/P head (ACE head) and the full erase head.
3. Using an oscilloscope, adjust the height of the guide roller and carry out horizontal position adjustment,height adjustment and azimuth adjustment on the audio R/P head (ACE head). When observing the envelope waveform, bring the CH-1 probe into contact with the envelope waveform test point, and bring the CH-2 probe into contact with the switching pulse (SW P) test point. While adjusting the tape path, set the trigger at the low side of the switching pulse (SW P) in order to observe the output waveform on the CH-1 side of the video head.

NOTE:The contact point for the oscilloscope varies from one model to another, so to find the correct point for your model, refer to the figure entitled "Test point for tape path adjustment" in the electrical circuit section of the service manual.

4. When checking the tape path by eye, use a dental mirror.

### 4-3-2. LOAD LEVER ASSEMBLY HEIGHT ADJUSTMENT (See Fig.4-3-2)

1. Refer to sections 3-9-2 and 3-10 and remove the opener mounting and the rewind lever assembly.
2. Position the height adjustment tool (VHJ-0102)③ under the full surface of the protrusion ② on the load lever assembly ①, as shown in Fig.4-3-2.
3. Using your fingers, gently screw the adjustment nut ④ clockwise into the nut box (VHJ-0048) ⑤ until the protrusion ② of the load lever assembly① touches the height adjustment tool (VHJ-0102)③ and the screw starts to feel tight. Next, loosen the adjustment nut ④ by 270° anticlockwise.
4. Load a cassette tape (T-160) and switch to PLAY mode. Check that when you do this, no scratches appear on the upper or lower edges of the tape. If scratches do appear, re-adjust the height.

Arrange the equipment so that the whole surface of the projection on the load lever assembly is positioned over the height a djustment tool (VHJ-0102) when seen from directly overhead.

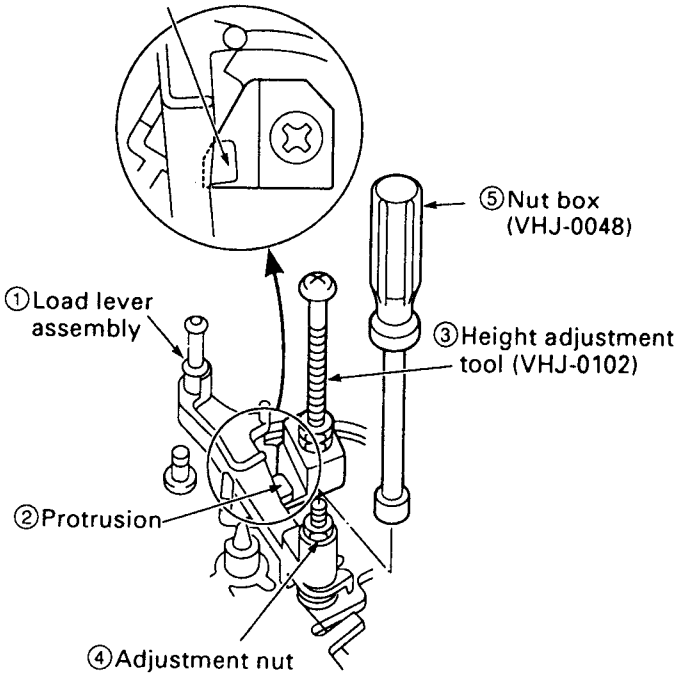



Fig.4-3-2

## 4-3-3. GUIDE ROLLER HEIGHT ADJUSTMENT (See Figs.4-3-3 and 4-3-4)

1) Play the Alignment Tape (H-7099-052-H) and check that the envelope waveform is at its maximum at the tracking centre. Then, after loosening the S guide roller and the T guide roller by rotating them anticlockwise, tighten them in turn until the envelope waveform becomes flat. If the envelope waveform is not at its maximum at the tracking centre, refer to section 4-3-4 and carry out a rough adjustment of the horizontal position of the audio R/P head (ACE head) before adjusting the guide rollers.
2) Adjust the S guide roller.
   ① Press the tracking button (Channel – ), and check whether, when the envelope waveform has reached 50% of its maximum, the front half of the envelope waveform is flat. If not, fine-tune the S guide roller as follows.
   a. If the front half of the envelope waveform is as shown in Fig.4-3-4 (a), this means that you have pressed the S guide roller too far. Therefore, loosen it slightly, and when it is in the state shown in Fig.4-3-4 (b), tighten it again, stopping when the envelope waveform is flat.
   b. If the front half of the envelope waveform is as shown in Fig.4-3-4 (b), this means you have not pressed the S guide roller far enough. Therefore, tighten it slightly, stopping when the envelope waveform becomes flat.
   c. If the front half of the envelope waveform is as shown in Fig.4-3-4 (c), it may happen that when you tighten the S guide roller, the wrapper waveform does not disappear, but sinks into the flat part, as shown in Fig.4-3-4 (d). If this happens, the status shown in Fig.4-3-4 (c) is normal, so loosen the S guide roller, then tighten it again until the envelope waveform is as shown in Fig.4-3-4 (c).
   ② Check that at the tracking centre, the output of the front half of the envelope waveform is not less than 80% of the maximum.
   ③ Rotate the S guide roller 20° anticlockwise.
3) Adjust the T guide roller.
   ① Press the tracking button (channel – ) and check whether, when the envelope waveform is 50% of maximum, the back half of the envelope waveform is flat. If not, loosen the T guide roller slightly, then tighten it gradually until the back half of the envelope waveform becomes flat.
   ② Check that the output for the back half of the envelope waveform is at its maximum at the tracking centre.
4) Check that the envelope waveform does not fluctuate when you switch from F-SEARCH to PLAY or from R-SEARCH to PLAY. If it does fluctuate, repeat steps 3) and 4).

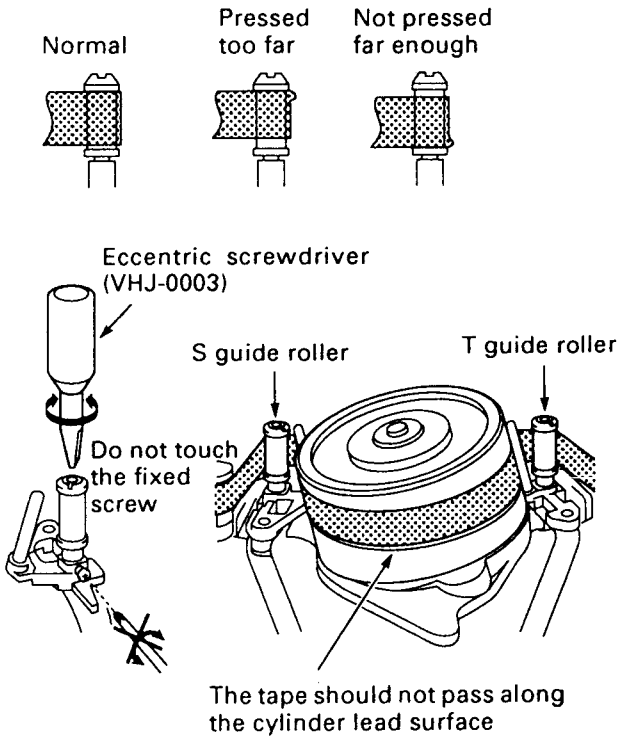

Normal
Pressed too far
Not pressed far enough
Eccentric screwdriver (VHJ-0003)
S guide roller
T guide roller
Do not touch the fixed screw
The tape should not pass along the cylinder lead surface

Fig.4-3-3

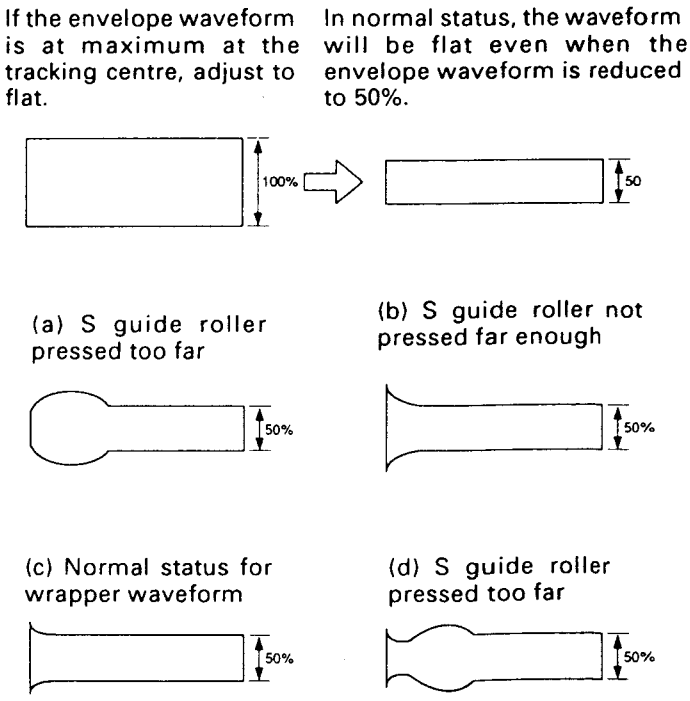

If the envelope waveform is at maximum at the tracking centre, adjust to flat.
In normal status, the waveform will be flat even when the envelope waveform is reduced to 50%.
100%
50
(a) S guide roller pressed too far
(b) S guide roller not pressed far enough
50%
50%
(c) Normal status for wrapper waveform
(d) S guide roller pressed too far
50%
50%

Fig.4-3-4

## 4-3-4. AUDIO R/P HEAD (ACE EAD) HEIGHT ADJUSTMENT, AZIMUTH ADJUSTMENT AND HORIZONTAL POSITION ADJUSTMENT

### (1) Height adjustment and azimuth adjustment (See Fig.4-3-5)

1) Play the alignment tape (H-7099-052-H) and observe the waveform of the audio output, using an oscilloscope.
2) Loosen the height adjustment screw in the counter-clockwise direction and decrease the amplitude of the audio output waveform. In this state, tighten the screw in the clockwise direcion and maximize the amplitude. Slightly tighten the screw further in the clockwise direction and decrease the amplitude, and then loosen it slowly in the counterclockwise direcion until the amplitude starts to reach the maximum.
3) Play the alignment tape (H-7099-052-H) and observe the waveform of the audio output, using an oscilloscope.
4) Set the amplitude of the audio output waveform to maximum by rotating the azimuth adjustment screw.
5) Make sure that the tape edge is running between the top of the audio head and the bottom of the control head.
   Gaps A and B should be roughly equal.

NOTE:Rotate the adjustment screw with a slotted screwdriver. Do not apply excessive force vertically. As the height adjustment screw also adjusts tilt, rotate it slowly. Do not rotate it excessively. And apart from the this screw, and height adjustmment screw, the screws is precisely adjusted before shipment from the factory, and should not be tampered with. Tampering with these screws can lead to scratching of the tape and other problems.

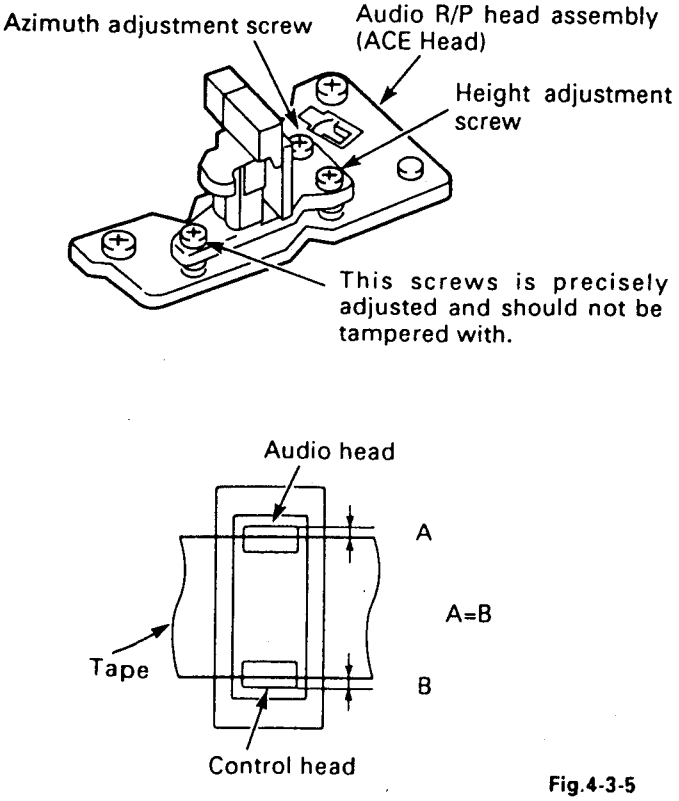



Fig.4-3-5

### (2) Horizontal position adjustment (See Fig.4-3-6)

1) Play the alignment tape (H-7099-052-H).
2) Press the tracking buttons (channel + and channel - ) simultaneously and set the tracking to the centre.
3) Using an oscilloscope, observe the waveform of the video head output.
4) Loosen the two fixed screws on the audio R/P head (ACE head) by between 20° and 30° anticlockwise.
5) Using a slotted screwdriver, adjust the position of the audio R/P head (ACE head). At the position where the amplitude of the envelope waveform is at its maximum at the tracking centre, tighten the fixed screw on the audio R/P head (ACE head). When you do this, check that the envelope waveform changes equally whether the tracking is shifted by pressing the tracking button in the plus or the minus direction.
6) Play the alignment tape (H-7099-052-H) and check that the amplitude of the envelope waveform is at its maximum at the tracking centre. If not. repeat step 1) to 6).
7) Refer to the electrical adjustments section of the service manual, and adjust the switching position of the servo circuit.

**NOTE:**

1. When you press the tracking buttons (channel + and channel - ) simultaneously, the tracking is reset to the tracking centre. When the tracking is at the tracking centre, the message "T - : - " will appear in place of the clock display on the front panel. If you keep pressing the channel - button the messages "T -: " and "T - -: " will appear, while if you keep pressing the channel + button, the messages "T : -" and "T : - - " will appear. Three seconds after you stop pressing the tracking buttons, the clock display will re-appear.
2. The check described in paragraph 6) is not necessary for models in which the only tape speed is SP mode.

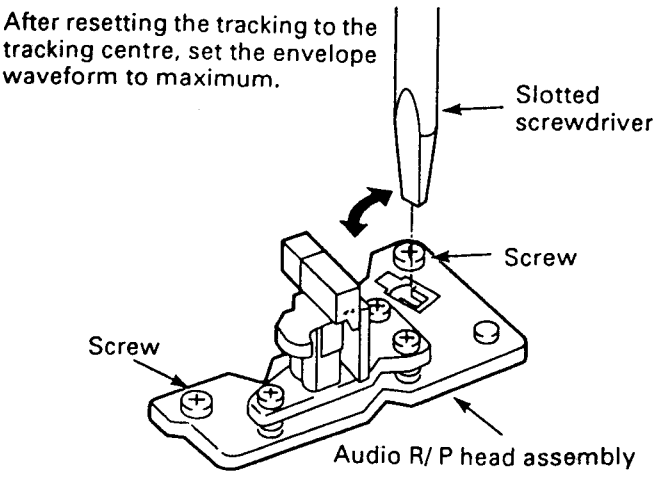

After resetting the tracking to the tracking centre, set the envelope waveform to maximum.
Slotted screwdriver
Screw
Screw
Audio R/ P head assembly

Fig.4-3-6

### 4-3-5. CHECKING AFTER ADJUSTMENT

1) Play the alignment tape (H-7099-052-H) and check that the envelope waveform is activated immediately and that there are no fluctuations in the envelope waveform or the audio output waveform.
2) Load a cassette tape (T-120) and use it to record and replay. Check that the envelope waveform is activated immediately and that there are no fluctuations in the envelope waveform or the audio output waveform. (When recording on the tape, input 1kHz to the audio input terminal. Use a scratch-free cassette tape (T-120). Check that at the tracking centre, the front half down and back half down are not more than 20% of the value at the point where the envelope waveform amplitude is at its maximum.
3) Check that the envelope waveform is activated immediately when you switch from PLAY to R-SEARCH or from R-SEARCH to PLAY. Check that there is no slack in the tape next to the pinch roller.
4) Check that the envelope waveform is activated immediately when you switch to PLAY from FF, REW, F-SEARCH, R-SEARCH or STOP mode. Check that there is no slack in the tape next to the pinch roller.
5) Check that the tape is not curling or riding up on the upper or lower flanges of the tape guides in PLAY, FF, REW, F-SEARCH or R-SEARCH modes.
6) Check that in PLAY mode, the tape runs as shown in Fig.4-3-7.
7) Load a tape (T-160) and play it back. Carry out the checks described in steps 3) to 5) above.

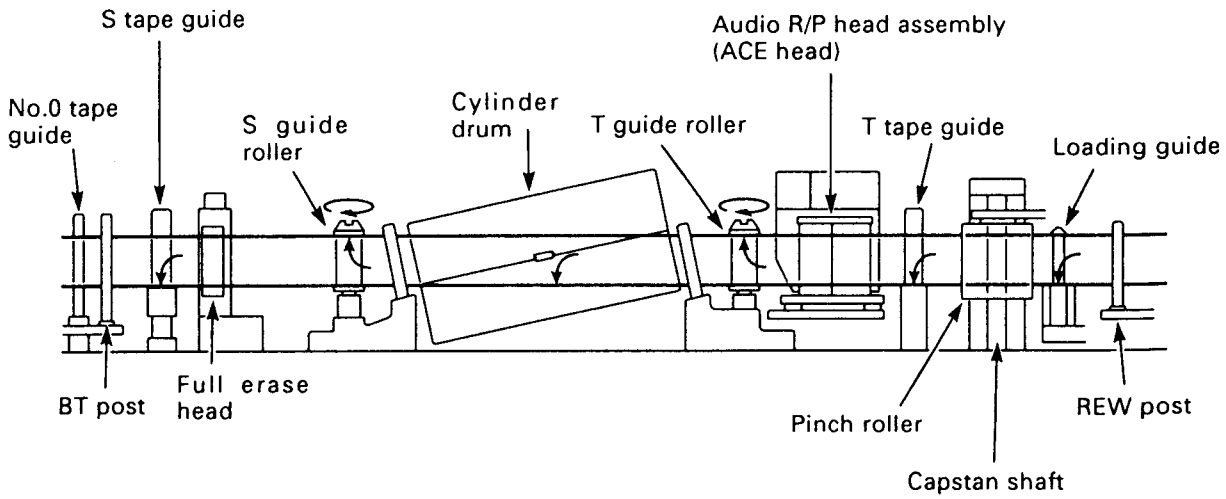



Fig.4-3-7

# SECTION 8
# ELECTRICAL ADJUSTMENTS

**VCR PRESETTING**

This VCR need three basic presetting by using the menus displayed on-screen. After all connection have been made, then follow steps 1 to 3 to preset the VCR.

The three presetting steps will be displayed in sequence on TV screen. The setting are entered with the remote control.

Turn on the VCR

1. Adjusting the TV receiver to the video channel: The AUTO SET-UP screen will appear. When the video channel has been preset, press the EXECUTE button on the remote control.
2. Country selection: Using the numeric button, select the country of use.
3. Language selection: When the desired language has been select, press the MENU button directly before prevent auto tuning will start.

When steps 1 to 3 have been finish, ready to operate the all operating modè.

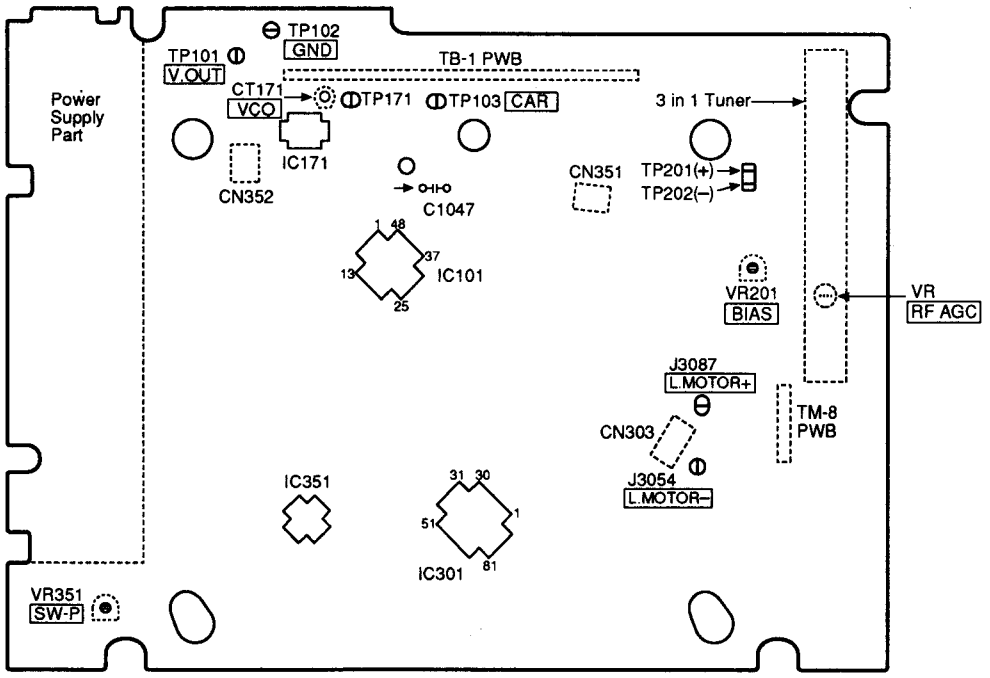
## 8-1. SERVO CIRCUIT ADJUSTMENT

- These adjustments should be done upon completion of the tape transport adjustments.
- If the tape transport adjustments (except the tilt adjustment) are done after these adjustments, follow the procedures again in section 2-1-3, "switching position adj."
- When a cassette tape is loaded, auto-tracking will be set immediately after starting the first playback. To adjust servo circuit, set back to the manual tracking condition, and set the tracking to the center position.

### 1-1. TEST EQUIPMENT AND STANDARDS REQUIRED

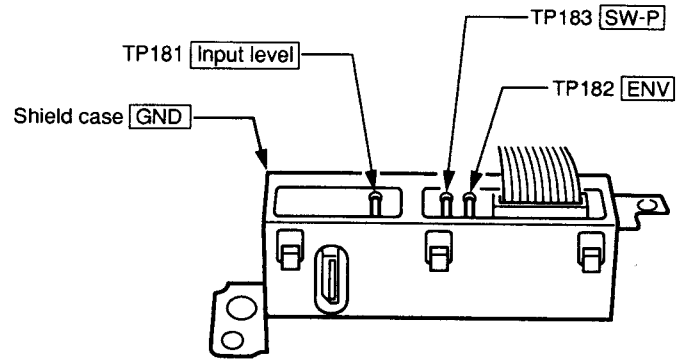
| | |
|---|---|
| Color Bar Signal Generator | PAL Color bar signal with 100% white level (EBU color bar signal) |
| Oscilloscope | Vertical sensitivity : 5 mV/DIV, external trigger<br>Bandwidth : more than 30 MHz |
| Alignment Tape | MH-2 (H-7099-052-H) : SP mode, color bar, 1 kHz |
| Blank Tape | VHS-type cassette tape |
| Monitor TV | |

### 1-2. LOCATION OF ADJUSTMENT POINTS




CP-1 PWB (Foil side)

Fig. 2-1-1




VP-1 PWB Assembly

Fig. 2-1-2

**Note:**

- Self-recording means "Record any broadcasting or video signal and play back the just-recorded portion."

## 1-3. SWITCHING POSITION ADJ.

| Measuring Point | Measuring Equipment | Adj. Condition |
|---|---|---|
| TP101 (VIDEO OUT) TP183 (SW-P) | Oscilloscope | PLAY mode Alignment tape (MH-2) |

| Adj. Location | Adj. Value |
|---|---|
| VR351 (SW-P) | 6.5 H ± 0.5 H |

1. After ejecting the cassette tape, load the alignment tape.
2. Within two seconds after the playback screen is displayed, press the remote control tracking buttons ( ▲ ) once, and cheak that the ATR display goes off.
3. Press the remote control tracking button ( ▼ ) once and set the tracking to the center.
   **Note:** Do not press the tracking buttons ( ▲ ) and ( ▼ ) continuosly.
4. Adjust VR351 (SW-P) so that the width of "T" becomes 6.5 H ± 0.5 H as shown in Fig. 2-1-3.

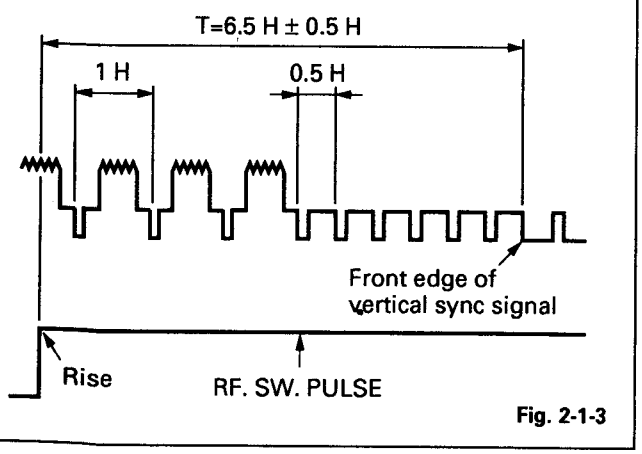



Fig. 2-1-3

## 1-4. SLOW TRACKING CHECK

| Measuring Point | Measuring Equipment | Adj. Condition |
|---|---|---|
| Picture of monitor TV | Color bar generator or broadcasting monitor | Self-recording (SP mode) SLOW mode Blank tape |
| | | Self-recording (LP mode) SLOW mode Blank tape |

| Adj. Location | Adj. Value |
|---|---|
| TRACKING ( ▲ ) button TRACKING ( ▼ ) button | — |

1. Set the tracking control to the center position by pressing TRACKING buttons ( ▲ ) and ( ▼ ) simultaneously.
2. Play back the self-recorded portion and set the VCR in the SLOW mode with the remote control unit.
3. Confirm that there is no noise on the slow playback display.
4. Press the TRACKING button ( ▲ ) about three times and check that noise dose not appear at the upper part of the display.
5. Adjust the tracking control to the center again.
6. Press the TRACKING button ( ▼ ) the same number of times as in the step 4 (about three times) and check that noise dose not appear at the lower part of the display.

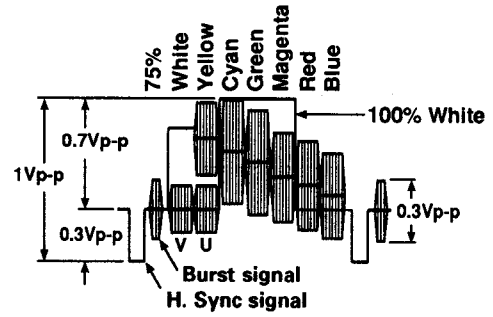
## 8-2. VIDEO CIRCUIT ADJUSTMENT

- In this model, video circuit adjustments (except for VCO circuit) are not performed. To check whether operations are normal, check the AGC level and PB-Y level using the following method.
- Use the adjustment relay jig to provide simple repairing of the VP-1 PWB assembly.

### 2-1. TEST EQUIPMENT AND STANDARDS REQUIRED

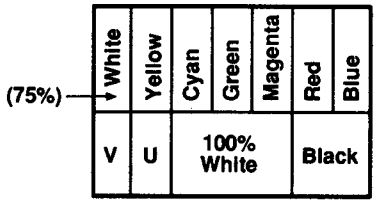
| | |
|---|---|
| Color Bar Signal Generator | PAL Color bar signel with 100% white level (EBU color bar signel) |
| Oscilloscope | Vertical sensitivity : 5 mV/DIV, external trigger<br>Bandwidth : more than 10 MHz |
| Oscilloscope Probe | Input capacity : less than 25 pF (10:1)<br>less than 40 pF (1:1)<br>Covering frequency : DC ~ 40 MHz (10:1)<br>DC ~ 30 MHz (1:1) |
| Digital Voltmeter | DC range |
| Alignment Tape | MH-2 (H-7099-052-H) : SP mode, color bar, 1 kHz<br>(Color bar signal waveform is described below. Refer to Fig. 2-2-1) |
| Adjustment Relay Jig | J-6090-035-A : 5-wire flat cable for VP-1 PWB assembly |

### ALIGNMENT TAPE COLOR BAR SIGNAL




Color bar signal waveform (MH-2)

Fig. 2-2-1




Color bar pattern (MH-2) on monitor TV

Fig. 2-2-2

### ADJUSTMENT RELAY JIG

Connect the flat cable end from the cylinder assembly to the VP-1 PWB assembly using the relay jig to provide simple repairing or adjustment of the VP-1 PWB assembly, as shown in Fig. 2-2-3. Further, when adjusting the VP-1 PWB assembly, be sure to make contact an end of shield case with bracket of the VP-1 PWB assembly to maintain the shield effect. If the VP-1 PWB assembly does not contact, there is insufficient ground and no proper play back image can be obtained.

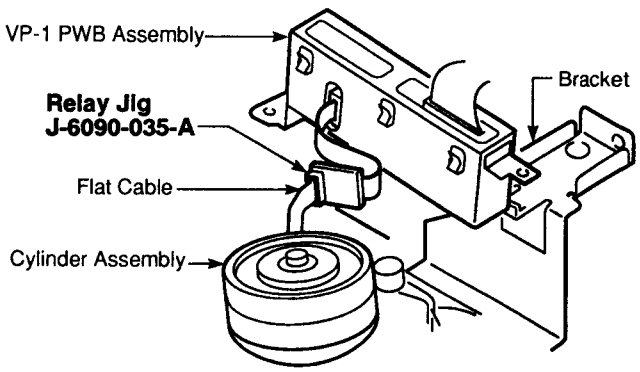



Fig. 2-2-3

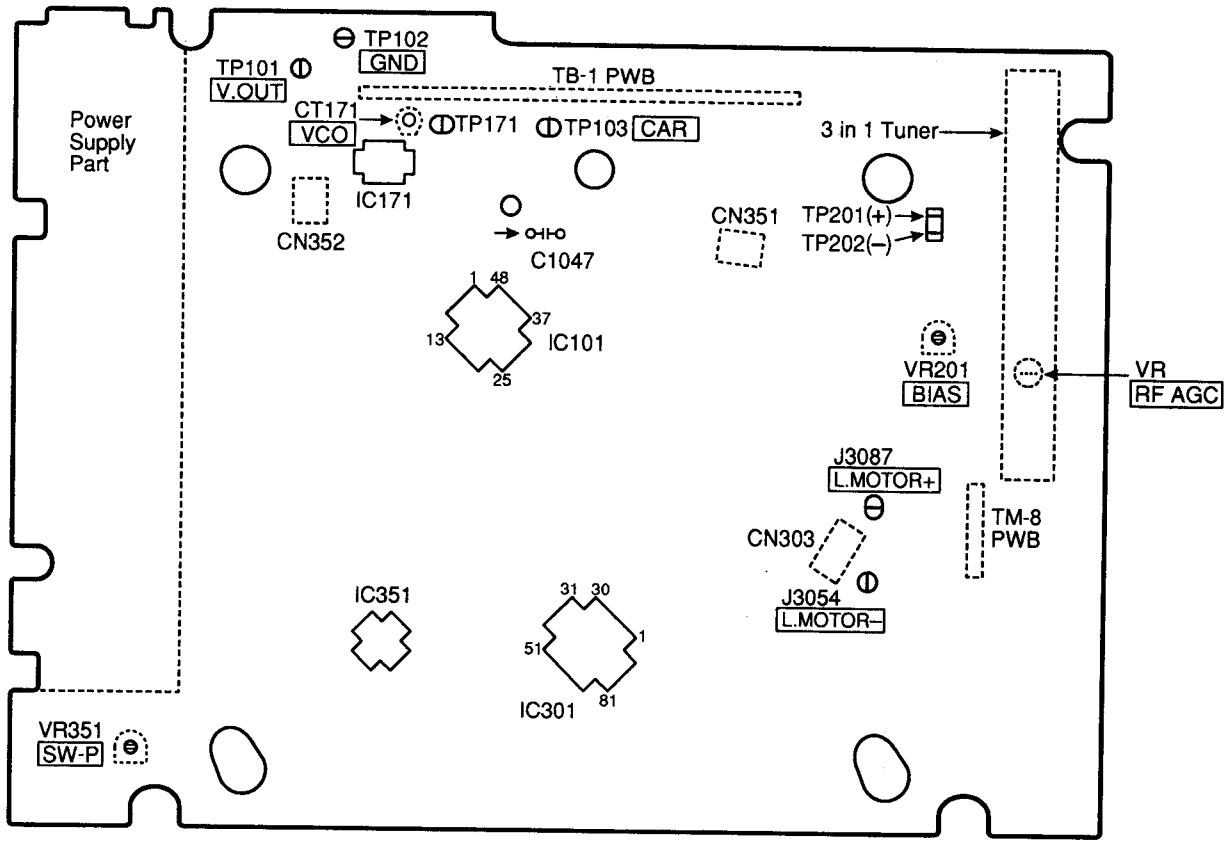
### 2-2. VCO (on screen assist) ADJ.

| Measuring Point | Measuring Equipment | Adj Condition |
|---|---|---|
| TP171 | Color bar generator<br>Digital voltmeter | E-E mode |

| Adj. Location | Adj. Value |
|---|---|
| CT171 (VCO) | 2.5 V ± 0.3 V |

1. Connect the digital voltmeter (DC range) to TP171 and GND.
2. Adjust CT171 (VCO) so that the voltage is 2.5 V ± 0.3 V.

## 2-3. LOCATION OF TEST POINTS




CP-1 PWB (Foil side)

Fig. 2-2-4

## 2-4. AGC LEVEL CHECK.

| Measuring Point | Measuring Equipment | Adj Condition |
|---|---|---|
| IC101 47 pin<br>or<br>C1047 ( → ) | Color bar generator<br>Oscilloscope<br>(10:1 probe) | E-E mode |

| Adj. Location | Specified Value |
|---|---|
| — | 0.5 Vp-p ± 0.05 Vp-p |

1. Connect the color bar generator to the video input terminal.
2. Make sure that the AGC level is 0.5 Vp-p ± 0.05 Vp-p as shown in Fig. 2-2-5.

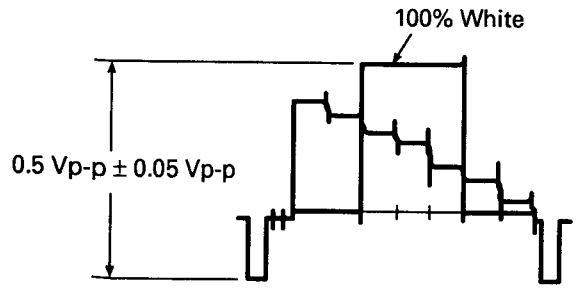



Fig. 2-2-5

## 2-5. PB-Y LEVEL CHECK.

| Measuring Point | Measuring Equipment | Adj Condition |
|---|---|---|
| TP101<br>(VIDEO OUT) | Oscilloscope | PLAY (SP) mode<br>Alignment tape<br>(MH-2) |

| Adj. Location | Specified Value |
|---|---|
| — | 1 Vp-p ± 0.1 Vp-p |

1. Terminate the video output terminal with a 75Ω resistor.
2. Make sure that the video luminance signal level is 1 Vp-p ± 0.1 Vp-p. (Refer to Fig. 2-2-6)

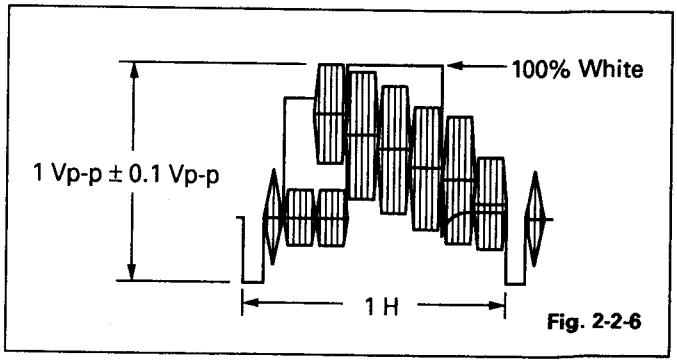



Fig. 2-2-6

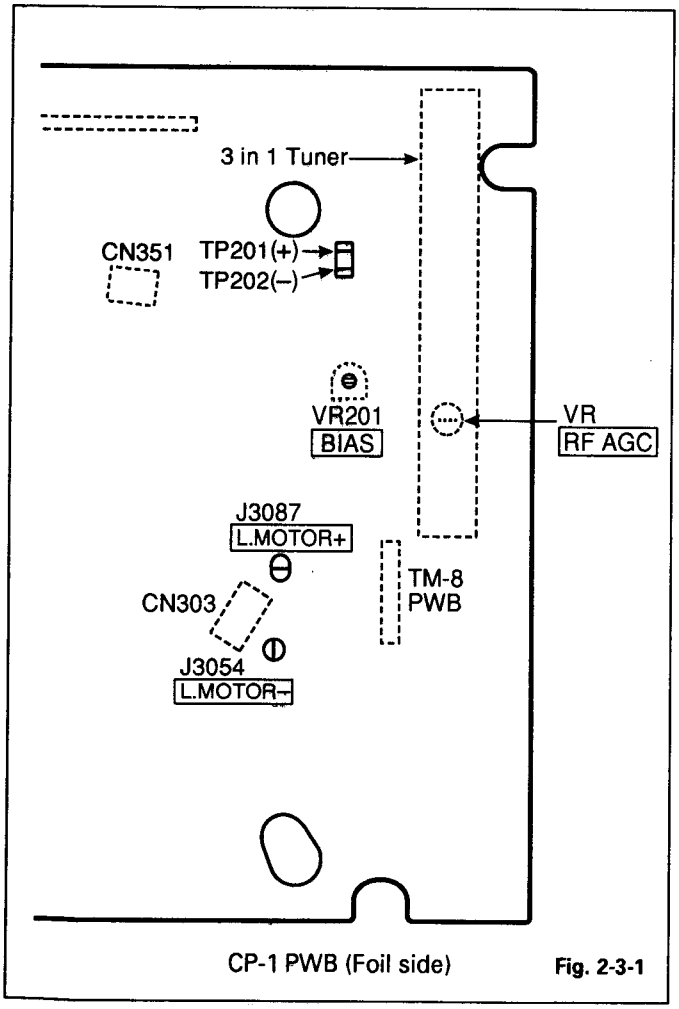
## 8-3. AUDIO CIRCUIT ADJUSTMENT

- Before making these adjustments, be sure to make the adjustments described in the tape path adjustment, especially the ACE heads adjustments (refer to the separate volume "Mechanism Manual") so that the tape traveling between the supply side guide roller and loading guide post runs without fluttering or curling.
- Before making these adjustments (except the ACE heads adjustments), be sure to make the adjustments described in section 8-1, "Servo Circuit." and section 8-2, "Video Circuit."

### 3-1. TEST EQUIPMENT AND STANDARDS REQUIRED

| | |
|---|---|
| Oscilloscope | Vertical sensitivity : 10 mV/DIV<br>Bandwidth : more than 30 MHz |
| AC Voltmeter | Effective value indication<br>Input frequency : 10 Hz ~ 20 kHz<br>Input impedance : more than 1 MΩ<br>Measurement level : 1 mV (full scale) |
| Frequency Counter | Input frequency : 20 Hz ~ 10 MHz |
| Blank Tape | VHS-type cassette tape |

### 3-2. LOCATION OF ADJUSTMENT POINTS




CP-1 PWB (Foil side) **Fig. 2-3-1**

### 3-3. BIAS LEVEL ADJ.

| Measuring Point | Measuring Equipment | Adj Condition |
|---|---|---|
| TP201 (HOT)<br>TP202 (COLD) | Oscilloscope<br>AC voltmeter<br>Frequency counter | REC (SP) mode<br>Blank tape |
| **Adj. Location** | | **Adj. Value** |
| VR201 (BIAS) | | 26 mVrms |

1. Load the VCR with a blank tape and select the record mode without all incoming signal.
2. After confirming on the oscilloscope that a 70 kH ± 5 kHz sine wave is being output, adjust VR201 (BIAS) so that the AC voltmeter's reading is 26 mVrms.

## 8-4. IF CIRCUIT ADJUSTMENT

- In this model, the circuits of the TUNER, IF, and RF converter have been made into one. Therefore, should one circuit malfunction, the whole unit must be replaced.

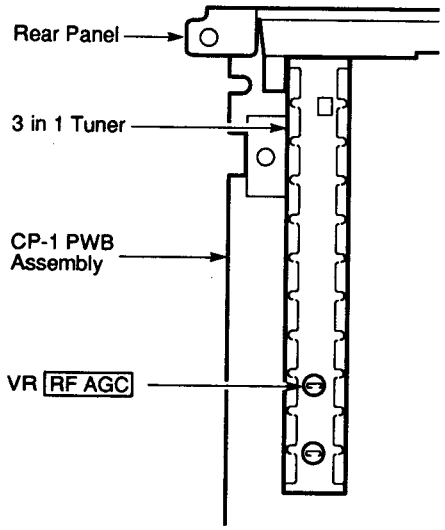
**Note:** The 3 in 1 tuner dose not need any adjustments, because precise adjustments were down befor shipment.

- The adjustments for the IF (RF AGC) circuit of the 3 in 1 tuner are described below.

### 4-1. TEST EQUIPMENT AND STANDARDS REQUIRED

| | |
|---|---|
| Monitor TV | |

### 4-2. LOCATION OF ADJUSTMENT POINTS




3 in 1 Tuner

Fig. 2-4-1

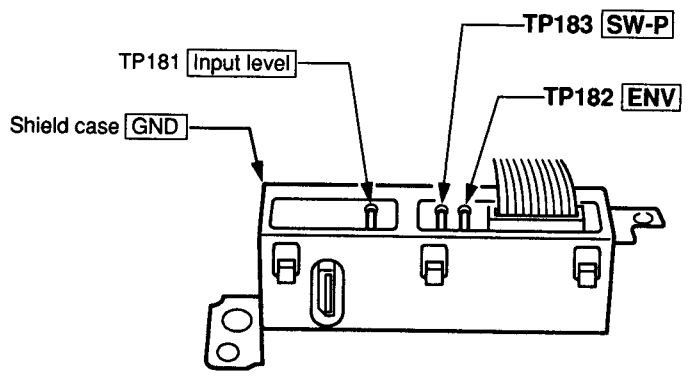
### 4-3. RF AGC ADJ.

| Measuring Point | Measuring Equipment | Adj. Condition |
|---|---|---|
| Picture of monitor TV | Monitor TV | E-E mode |
| **Adj. Location** | | **Adj. Value** |
| VR (RF AGC) (on the 3 in 1 tuner) | | S/N is best point |

1. Connect the monitor TV to the VHF/UHF antenna output terminal.
2. Connect the VHF or UHF antenna to the VHF/UHF antenna input terminal.
3. Receive the middle electrical field (70 dBμ ~ 90 dBμ) of the VHF or UHF channel, and slowly turn the VR (RF AGC) from the point where snow-noise is present to the point where it just disappears from the monitor TV.
4. Confirm by monitor TV that there is no beat and saturation (S/N is best point) when receiving any TV channel.

## 8-5. TEST POINTS FOR TAPE PATH ADJUSTMENT

Test points TP182 (ENV) and TP183 (SW-P) for tape path adjustment are shown in figure below.




VP-1 PWB Assembly

Fig. 3-1